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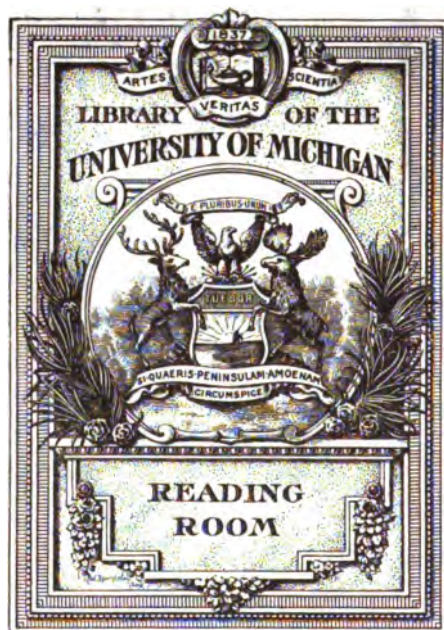
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APPLETON'S RAILWAY SERIES

EDITED BY
EMORY R. JOHNSON, Ph.D.

**RAILROAD TRAFFIC
AND RATES**

**VOLUME I
THE FREIGHT SERVICE**



RAILROAD TRAFFIC AND RATES

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VOLUME I

THE FREIGHT SERVICE

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PREFACE

4-25-25 N.Y.T.
The information presented in these two volumes was secured not only from the printed sources noted in the lists of references following the several chapters, but also from railway officials and other traffic and transportation experts. The blank forms, which have been reproduced in large numbers to make the book concrete and of practical use to railway men, were contributed by traffic officials who carefully explained the manner in which the various forms and papers are used. Much of the other technical material was secured by personal interviews and correspondence.

All of the chapters of a technical character were submitted, either in typewritten form or in galley proof, to traffic and transportation experts for criticism, correction, and enlargement. In some instances the same chapter was read by two or more officials. The authors wish to express their appreciation of the assistance thus received. The names of those who have aided with criticism and the titles of the chapters read by the several experts are as follows:

Chapter IV. *The Organization of the Freight Traffic Department.*

George D. Dixon, Freight Traffic Manager, Pennsylvania Railroad Company.

R. C. Caples, General Agent, Traffic Department, New York Central Lines.

PREFACE

Chapter V. *Terminal Freight Services and Facilities.*

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Chapter VI. *Freight Shipping Papers and*

Chapter VII. *Accounting of Freight Revenue.*

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Chapters VIII to XI. *Car Service and Efficiency.*

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Chapter XIII. *Fast Freight Lines, Their History and Present Service.*

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Chapter XIV. *Time and Preference Freight.*

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Chapter XV. *Freight Traffic Associations.*

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J. F. Tucker, Chairman, Central Freight Association.

Chapter XXI. *Rate Making in Trunk Line and Central Freight Association Territories.*

C. C. McCain, Chairman, Trunk Line Association.

Chapter XXII. *Rates in Southern Territory and Texas.*

J. M. Culp, Vice President, Southern Railway Company.

Chapter XXIII. *Rate Making in Western Trunk Line, Trans-Missouri, and Southwestern Territories.*

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PREFACE

- Chapter XXIV. *Transcontinental Freight Rates.*
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- Chapter XXV. *Import and Export Rates.*
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- Chapter XXX. *The Immigrant, Colonist, and Second-Class
Services.*
C. L. Hunter, Vice Chairman, Trunk Line Association.
- Chapter XXXI. *The Baggage Service.*
F. J. McWade, General Baggage Agent, Pennsylvania
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- Chapter XXXII. *Passenger Traffic Associations.*
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C. L. Hunter, Vice Chairman, Trunk Line Association.

PREFACE

Chapters XL to XLIII. *Express Services, Rates and Public Regulation.*

O. C. Brobough, Bureau of Traffic, Interstate Commerce Commission.

Valuable suggestions were also received from many officials who did not read chapters; among those who thus gave aid special mention should be made of:

W. W. Finley, President, Southern Railway Company.

Edward J. Fallon, Special Agent, Comptroller's Department, Philadelphia & Reading Railway Company.

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Pennsylvania Railroad Company.

Luis Jackson, Industrial Commissioner, Erie Railroad Company.

R. A. Taylor, Manager, Virginia and West Virginia Demurrage Bureau.

The authors are under special obligations to Mr. Thomas P. Harris, of Philadelphia, who has worked with them in

PREFACE

preparing the manuscript for the printer and in reading the proofs. He also prepared the index. His watchful care as to details has prevented many errors that would have otherwise found their way into print.

The book has been written mainly to provide railway men with information, as reliable as possible and as complete as practicable, regarding the intricate and detailed work of those who have to do with railroad traffic and with rate making. The amount of labor required to prepare these volumes will be best appreciated by those who are daily confronted with traffic and rate problems. The book is not the result of a few months' labor; it has grown up during the past five years alongside of a course given each year to advanced students in the University of Pennsylvania. It is thus a book intended for students of transportation. A few of these students are in university classes; but most of them are actively engaged in the railroad service.

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PART I

THE TRAFFIC OF AMERICAN RAILROADS

CHAPTER I

CHARACTERISTICS OF AMERICAN RAILWAY TRAFFIC

Comparison of American and foreign railroad services—Factors determining volume and nature of traffic—Influences of area and topography and climate upon railroad services—Control over railroad services exercised by stage of civilization and of industrial development—Effects of use of waterways and of business habits upon railroad services—Volume of passenger traffic determined by density of population—Passenger classes and effects on travel in Europe and the United States—The five characteristics of the freight traffic of American railroads—The four characteristics of their passenger traffic—Fares and rates are the products of traffic conditions.

THE freight traffic of American railways far exceeds the tonnage handled by the railroads in any other country; indeed, the demand for transportation has been so great and the needs have been so fully met in the United States that the line mileage of our railways is greater by fifteen per cent than the mileage of all Europe and comprises two fifths of the railway net of the entire world. The density of traffic, naturally, varies with different sections of the country, and travel and tonnage are light in the sparsely settled sections, but the economic activity is such that the railways in the United States carry nearly twice as many tons as are shipped in Great Britain, double the tonnage dispatched in Germany, and five or six times the weight of cargo shipped in France.

This comparison, favorable as it is, does not do full

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justice to American railways, because it does not take into account the relative distances freight moves in the four countries. The areas of primary production are so widely separated from the manufacturing centers in the United States, the farm and the factories are so far removed from the large markets, in and through which goods reach consumers, that freight must be carried long distances. Two hundred and fifty-four miles is the average length of haul for a ton of freight in the United States, while in the compact countries of Great Britain, France, and Germany the average distance traveled by a ton of freight is less than one third that number of miles.

The unit to be used in comparing the total freight services of one railway system with those of another, or of the railroads of different countries, is the freight ton mile—one ton of freight moved one mile. The freight ton mileage, the tons shipped multiplied by the number of miles carried—236,600,000,000 ton miles in 1907—was roundly nine times that of the German railways and twenty times the figures for France. The ton mileage of the traffic on the British railways is not known, but it is apparently about one sixth of that of the American railroads.

Figures, such as the foregoing, as to total length of line and aggregate ton mileage, give but partial information either regarding the kind of railroad systems in use in the United States and other countries, or concerning the traffic services performed by the railways. The line may have from one to four tracks; the roadbed, structures, and equipment may be of various degrees of efficiency. A "mile of railroad" is an indefinite term that means little until it has been described. Likewise, figures for ton mileage measure dissimilar services when applied to the rail traffic in different countries or to the traffic of particu-

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lar railroads within a country of continental proportions, such as the United States possesses.

The services of American railways—the volume and nature of their traffic—are determined by two classes of factors, those affecting both freight and passenger transportation in general, and those special factors that apply to only one of the two branches of the railroad business. To understand American railway traffic and the rates and fares charged therefor, and to make accurate comparisons either between railroads in different sections of the United States or between the lines in our country and abroad, these general and special factors must be kept in mind and given due weight.

The size, topography, and climate of the United States impose controlling conditions upon transportation. The railroad system adapted to the needs of a small insular country such as Great Britain or Japan or to the territory of a small portion of Europe, such as France or even Germany, will necessarily be unlike the system required in the United States, having absolute freedom of trade and traffic movement over an area equal to that of all Europe. If traffic be carried tens or hundreds of miles, as in most parts of Europe, it will be handled in relatively small units with an equipment adapted thereto; but if the distances to be covered are hundreds or thousands of miles, as is true of passenger travel and of the shipments of foods, materials, and manufactures within, out of, or into the United States, economy requires that each car, train, and locomotive shall move a relatively large number of passengers or of tons of freight. The mere size of the United States in part explains some of the obvious differences between the traffic methods of European and American railroads.

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Topography is a physical factor hardly less influential than distance. The fact that the territory within the United States includes two relatively narrow seaboard areas separated by the Appalachian and Cordilleran ranges from the broad valley drained by the Mississippi River and its tributaries and composed of prairies and gently rolling lands, has, from the beginning of railroad transportation in this country, strongly influenced the character of construction, the kind of equipment used, and the methods of handling traffic. The effects of topography have been especially great because the mountain uplifts lie athwart the routes of heaviest traffic, which in the United States run east and west connecting our populous and manufacturing Eastern States with the Mississippi Valley, from whose rich stores of mineral wealth and from whose fertile farms a return tide of traffic streams eastward over the Alleghanies to the mills and markets of both Atlantic America and of Europe; while the same great central basin of our country carries on a growing volume of commerce that moves westward and eastward to and from our great West and the far Orient. The majority of the great trunk lines of American railroads follow the parallels of latitude, in spite of the fortunate fact that the rapid progress of the southern and southwestern sections of the country is steadily swelling the volume of north and south traffic and increasing the importance of the roads that run with the lines of longitude and do not have mountains to overcome. In general, it has been and still is true that in the United States the railroads must carry traffic long distances, and must haul a relatively large share of their tonnage over mountain grades.

In Europe, the relation of traffic currents to topog-

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raphy; though somewhat complex, is, broadly speaking, the opposite of the relation in the United States; because the Alps have a general east and west trend. The great plain of Europe lies north of this continental divide and extends, with broadening area, eastward from the great seaports and industrial centers of western Europe upon which the major traffic routes converge. The countries about the Mediterranean constitute another important though secondary, traffic area. Fortunately for Europe, only a comparatively small volume of heavy freight need be shipped by rail between the northern and southern traffic districts. The transalpine railroads handle mainly passengers, mail, express and light freight.

The climatic conditions prevailing in a country and in different sections of a country, as the result of topography and other geographic factors, establish a third physical control over the location and the traffic of railroads. It is climate, particularly rainfall, that sets the sharpest limits to production and population. The only resources of arid lands are their minerals and they can be made available only to the extent that a mining population can be provided from other sections with food and water.

The United States has been so generously supplied with water resources that the entire three fifths of the country lying east of the Rocky Mountains, with the exception of a part of the strip between the mountains and the 100th meridian, is productive and everywhere habitable. In the Pacific coast states the rains reach to the Sierra Nevada and Cascade mountains, upon whose spacious roof heavy winter snows linger late into the spring to nourish the streams during the summer months that their waters may furnish power the year round and serve for irrigation when crops are growing. Over most of the broad Cor-

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dilleran highland the rainfall is so light that only limited areas can be successfully farmed. Irrigation is adding small, though highly productive, areas to tillage; but the climate is such that the mines, which are many and rich, and the ranches, which in the northern half of the Cordilleran region are numerous and broad, furnish the population with its chief industrial supports. Agriculture and general manufactures can never become extensive in the western plateau.

The United States, indeed, has a wide range of climate. The East, the South, the Central West, the mountain section, and the Pacific slope—each section has its own climate and its consequent industries. Each has its special transportation needs that have caused the characteristics of the traffic services of American railroads to vary with different parts of the country.

Another general determinant of the character of railroad traffic, both freight and passenger, is the stage the country has reached in economic and social development, its state of civilization. The higher the degree of civilization the greater the demand for transportation. The working of this law is particularly noticeable in the passenger travel, the number of trips per person being highest in such countries as Great Britain, Belgium, Switzerland, Germany, France, and the United States, whose inhabitants travel for social and cultural as well as economic reasons. It hardly need be said that cultural conditions are only one factor affecting the volume of travel and that the countries just named do not necessarily rank as above listed in the degree of their civilization although they are cited in the order of average per capita trips per annum.

Most persons travel for business reasons, and business conditions mainly determine the amount of traveling done,

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but in all countries there is an increasing volume of travel for education, recreation, and other noneconomic motives. In the smaller countries of Europe where distances are short and the cultural inducements to travel are strong, cheap railway transportation has caused a rapidly rising percentage of the population to gratify their travel longings. In the United States, as a whole, the effect of cultural influences upon passenger traffic, while prominent, has been less marked than in several other countries both because our long distances are a powerful deterrent to travel and for the reason that our land, though rich in scenic beauty, is still too young to abound in historic shrines and monuments of art.

That freight tonnage, as well as passenger travel, is greater per capita the higher the stage of civilization, and rises with the social and industrial progress of every country, is a general law well illustrated by traffic conditions in eastern and southeastern Europe as contrasted with those prevailing in western Europe where civilization has reached a higher stage. This law expresses a fundamental and significant fact. Civilization results from the growth of human wants which not only increase but become more complex as civilization advances. New industries arise to satisfy the enlarging demands of the individual and society, the processes of manufacture are subdivided, there is a greater territorial subdivision in production, and from all this results an increase in freight traffic far exceeding the rate of growth in population. Thus among the general conditions affecting the volume and character of the present and future freight traffic of American railroads is the degree of civilization now attained in this country and the rate at which it is advancing. Such an influence as this is manifestly not a factor whose effect can be definitely

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measured, but a knowledge of its presence may help to explain the distinctive features of the freight traffic of our railroads.

In contrast with these general factors, physical and social, affecting the characteristics of both the freight and passenger services, are certain special factors influencing the freight traffic and others that apply to passenger transportation.

The volume and nature of the freight handled by the railroads of any country or section of a country is determined primarily by the industries. Transportation is the servant of industry. The character of the country's products, whether they be of agriculture, of mines, or of forests, the location of the centers of manufacturing, whether they be close to or remote from the sources of materials and the markets and centers of distribution, the extent to which the leading industries have been developed—these and all the many conditions determining what kinds of business shall be carried on and influencing their extent and territorial distribution decide what freight services the railroads shall perform.

A study of the sources of freight traffic in the United States, which will be made in the following chapter, will reveal the nature of American industries in some detail and indicate the nature of the rail transportation services they require. Here it need only be said, in passing, that nowhere else in the world do the industries require the handling of heavy materials as long distances as they are transported in the United States, and yet, despite this fact, there is an exceptionally high degree of integration of industry and of territorial specialization in production. In other words, the American railways have fully met the conditions imposed upon them by the industries they serve.

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The extent to which inland and coastal waterways are used must influence the volume and kind of freight carried by the railroads. For Japan and the United Kingdom the surrounding ocean provides a cheap highway that can be readily taken by much traffic that must move by rail in most countries. In Germany and France the ton mileage of the traffic carried on the rivers and canals equals one third the ton mileage of the rail freight. The more waterways are used the lower will be the percentage which minerals and other bulky commodities comprise of the total traffic of the railroads. In the United States, minerals account for an exceptionally large share—fifty-five per cent—of the total rail tonnage partly because, with the exception of the Great Lakes, the Ohio River, and a portion of the north Atlantic seaboard, the waterways are little used for transporting the products of our mines. Should the United States improve and extend its inland waterways, as is expected will be done, the traffic of our railroads will consist more largely of the classified or higher grade freight and relatively less of “commodity” or bulk traffic.

Another special factor that has had much influence upon the freight traffic services desired of railroads is the business habits of the people. The inhabitants of different countries and, to some extent, the residents of separated parts of the same country, have different ways of conducting their affairs. The Japanese, the Dutch, the English, the Americans, each have their accustomed business methods as farmers, merchants, and manufacturers; and the railroads must do the work of transportation in conformity with the requirements of industry as carried on in each country; just as the railways in the United States must serve the Yankee farmer and trader, the southern planter, the western ranchman, and the lumber-

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man of the Northwest. In spite of all that has been done to standardize railway methods in this country, the wide diversity in our industries and in our ways of doing things produces numerous variants in railway practice. Services conform in general to differences in business needs.

Of the special factors affecting the volume of passenger traffic of railways, sparseness or density of population is the most controlling. An agricultural section or a region rich in bulky minerals, although containing but a small population, may furnish a large freight tonnage, but travel will be light. As population increases, passenger traffic expands and at a more than proportional rate. In closely settled sections the trips per capita are greater than in regions having fewer persons to the square mile. Various reasons account for this. The number of trips taken would, other things being equal, naturally be in inverse ratio to the difficulties to be overcome. Long distances deter people from travel; long journeys are expensive, time-consuming, and wearisome. Short distances, from city to city, or from city to mountains or seashore, are a lure to travel; fares are cheap and the trip is a pleasure. Men do business by making a personal call instead of by mail; and they relieve the monotony or lighten the drudgery of life by more frequent week-end or holiday trips. The fact that England and Belgium outrank the United States in the average number of journeys taken per inhabitant is easily accounted for by the density of the population living within their small areas.

In spite of the limitations which long distances place upon the number of trips taken, the average distance traveled by the American is exceeded only, and that slightly, by the average for the people of Great Britain. This is doubtless due in part to the relatively high average

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income of the people of the United States, a fact that has had much influence upon the policy followed by American railway companies in developing their passenger services. While European railways have sought to get the masses to travel by offering them, for low fares, third-class accommodations without luxuries and fourth class with few comforts and little speed, the American railway policy has been to continue to offer only the "first class" to the rank and file; and, broadly speaking, the railroads have striven to increase travel rather by making the services more attractive than by making them cheap. The European roads have found a large demand for the cheaper though inferior grades of service, nine tenths of the travel being in classes below the second.

The subdivision of passenger traffic in Europe into several grades is frequently said to be the result of social stratification and the existence of class feeling; whereas it is contended that Americans are more democratic in their feelings and are not influenced by class distinctions. Possibly this may be a partial explanation of the difference between the policies of European and American railroads as to the classification of traffic, but it is probable that the low average income of the industrial classes in Europe has been the chief reason for the development of the third- and fourth-class passenger services. The cause has been more economic than social. In the United States, moreover, it seems that the traditional policy is gradually changing with the steady growth of "Pullman" services, and of the patronage of extra-fare trains whereby passenger traffic is coming more and more to consist of two classes; one provided by the "first" class day coach patronized by those who desire to travel cheaply, and the other provided by the "parlor" coaches and extra-fare trains used by those

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who place comfort and speed above economy. It remains to be seen whether the demand for cheap transportation in America will cause our railroads to break up the present "first" class into two grades, and thus virtually introduce the European third-class service.

Among the many minor factors that account for the volume of travel in any country is the strength of the desire of the people for outdoor life. Some people, though they live mainly in the cities, are content to pass most of their leisure as well as their working hours indoors, while to others the appeal of the outdoor world is irresistible. The Germans, for instance, still have the instincts of their ancestors; they still love to have the trees about them and the open sky above; and, now that such a large part of them is obliged to live in cities, they satisfy their longings for the open by frequent railway excursions to the suburbs, to the country, to the mountains and the sea. Railway travel in every country, and particularly among a nature-loving people, tends to grow with increasing rapidity as people change from rural to city life.

The freight traffic of American railroads, as the result of the general and special factors that have been considered, has several clearly marked characteristics which may be briefly summarized:

1. The tonnage consists mainly of bulk traffic, minerals, in 1908, contributing 55.72 per cent, forest products 11½ per cent, and agriculture 8¼ per cent; while in addition to these three groups of commodities, which comprise three fourths of the total tonnage and which are mainly handled in bulk, manufactures, a large part of which consist of heavy articles shipped in car load or train load units, contribute over thirteen per cent of the aggregate. It is safe to say that not less than four fifths of the freight traffic of

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our railroads is shipped in bulk in car load and train load lots.

2. The fact that these bulky commodities are transported long distances, much farther than in European countries, strengthens the tendency to use large cars and to haul heavy train loads. Nearly two thirds of the freight cars owned by American railway companies are of from 60,000 to 80,000 pounds capacity, twelve per cent are in the 100,000 pounds class, and less than one per cent were built to carry less than 40,000 pounds. Formerly the standard freight car in America had a capacity of 40,000 pounds, but now such cars include only seven per cent of the total number and four per cent of the total capacity of our freight equipment. Moreover, cars belonging to shippers and private car lines and which are not included in the figures upon which these percentages are based, are of more than average size.

The contrast between American and European practice as regards size of freight equipment used is most striking. Our small car of twenty tons (40,000 pounds) capacity is the size of their largest mineral car; and " wagons " of that capacity are in small demand. For ordinary freight a ten-ton " truck " is amply large, and coal, iron ore, and other heavy bulk traffic are regularly carried in fifteen- and twenty-ton cars. The demand of the average European shipper and buyer is for frequent transportation in small units, rather than for a large and infrequent service. The organization of business in Europe is different from its organization in the United States, and the railroads in each section of the world conform to business requirements.

3. The heavy average freight train load in the United States—352 tons, three and four times that prevailing in the leading countries of Europe—results naturally from

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the bulky character of the traffic, from the use of large cars, and from the long distances freight moves. This method of handling freight in large quantities also fits into the prevailing methods of doing several branches of business in this country where it has been, and to a large extent still is, customary for manufacturers, dealers and merchants to place larger orders than is the practice with European business men. In the United States many, if not most, large buyers seek to secure commodities at low prices and to save on freight rates by laying in a stock that will last some time; although, by so doing, storage facilities must be provided; but in European countries, at least in those with which comparisons have been made in the preceding paragraphs, the object of the business man is to tie up only a small amount of capital in his stock, and to minimize warehousing expenses. To accomplish these ends, he is willing to pay the higher freight rates which the railroads are obliged to charge for delivering goods in small quantities and for performing their frequent services with promptness and reliable certainty.

4. The large average train load in the United States, furthermore, is in part the result of the fact that there is not only a large-scale production, but a union, in several instances, under one management of the business of securing, by mining or otherwise, the raw materials, of transporting the materials, of manufacturing, and, to some though a less extent, of distributing the finished products. Iron ore is handled from mine to lake pier, and from lake port to furnaces in train loads of 2,000 to 4,000 tons, coal is shipped from mine to yard or port in long trains of fifty-five-ton cars, and petroleum, though much of the crude oil now moves unseen through pipes, still adds its tank cars in part train or whole train loads to the traffic of the railroads.

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5. To the two causes just cited to account for the large train load in the United States, there should be added the third and equally evident fact that in our wide-reaching country, with its vast and varied productive output, products such as grain, livestock, and cotton are brought together in great primary markets, like Chicago, Kansas City, Atlanta, and many others, the traffic pouring into those reservoirs in streams sometimes large and sometimes small but flowing out in enlarged channels to domestic centers of distribution, from which consumers are supplied, or to the seaboard exits of our exports. Trains loaded with cotton, grain, or refrigerated provisions move from the interior to the seaboard; likewise train loads of our fruits travel from Florida or California to New England, while tropical fruit trains are run from New Orleans and the north Atlantic ports to the interior of the country.

The traffic conditions, here briefly stated, determine what the character of the freight service of American railroads must be and establish the principles controlling rate-making. American railways are compelled to render services unlike those demanded of European roads, and the rates charged for those services must not only average low, but must be so adjusted as to permit and facilitate traffic intercourse of large volume between places separated by continental distances. Rate-making must harmonize with services to be performed.

The passenger traffic of our railroads is characterized:

1. By the absence of the definite division of the service into three or four classes, as is the practice in Europe. The chief reasons for this difference are, however, to be sought in economic conditions that must change with the growing density of population in the United States. It seems probable that American and European practice as

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regards the classification of passenger traffic will differ less as the economic and social conditions in the United States approximate those in Europe.

2. The general ideal, to which American passenger traffic managers adhere, of a service of maximum speed and comfort (unfortunately, maximum safety of travel has not been such a definite part of the ideal), while resulting in a standard of excellence of which there is much reason to be proud, has not permitted our railroads to cater largely to the masses of the people by offering them a cheap service—regular and frequent, though slow—and not in anywise luxurious, such as is provided by the third and, to some extent, by the fourth class in Europe. Until an inexpensive service, such as this is regularly offered on all the ordinary passenger trains, with the exception of the express and extra-fare trains, it does not seem reasonable to expect the large expansion in traffic that can come only with the greater use of our railroads by the wage-earners and other persons of small income. To socialize passenger travel, a cheap service is required.

3. The United States as a whole being relatively sparsely populated, as compared with European countries, and the average distance between towns and cities being long, the passenger traffic of American railroads, though large in the aggregate, is spread over such an extensive line mileage that the density of traffic, as measured in the number of passenger miles per mile of road, is much lower than in several other countries. In France the railroads have a density of passenger traffic nearly three times, and in Germany almost four times, as great as our lines have, while a comparison with Great Britain, if the necessary figures were to be had, would show a still higher ratio against our railroads. When one considers that only one

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fifth of the total earnings of American railroads are derived from fares and that only twenty-eight per cent of the revenues are secured from the operation of passenger trains—from passengers, mail and express—it is evident that the passenger service in this country is still relatively undeveloped, and that its future growth offers the possibility of a large increase in the traffic and profits of the railways in the United States.

4. That the average length of the passenger journey should be greater in the United States than in more thickly settled countries is to be expected—it is more than double the average trip in Germany and about one and four fifths the average for France—but that the length of journey, despite our growing density of population, should have increased twenty-three per cent during the past decade, while the average in France and Germany has remained practically stationary, is a less obvious fact. The explanation lies in the wide development of electric railways in the United States and the transfer from the steam railroads to the electric lines of a large share of the short-distance suburban and interurban traffic. In Europe there has as yet been but a small mileage of electric railways constructed, and the steam roads still handle such a large volume of short-trip traffic as to keep the average length of journey at a low point.

Passenger fares, as well as freight rates, are the product of traffic conditions and of the methods followed in performing the services rendered to meet those conditions. The relative sparseness of population in the United States, with the consequent low density of passenger traffic per mile of railroad, the policy of not dividing the services into classes but of providing all or the great majority of travelers with speed and luxury as well as comfort, and

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the necessity our steam railroads have of sharing much of the short-distance traffic with the electric lines, cause passenger fares to average higher in the United States than they do in several foreign countries. For services of the highest grade, our railroads have as low fares as are to be found abroad, and probably our best services excel those in other countries; but the absence of facilities for cheap and slow travel causes average fares to be relatively high.

The freight and passenger services of American railways are characterized by a high degree of efficiency. The development of railroad transportation in the United States, shaped by economic needs and social conditions, has not only kept pace with the progress of the country, but has done much to make possible the nation's marvelous advance. In the freight service the accomplishments of inventive and administrative genius have possibly been more notable than in the transportation of passengers; but in both departments there has been a most successful adaptation of means to ends.

CHAPTER II

SOURCES OF AMERICAN RAILWAY FREIGHT TRAFFIC

Knowledge of sources of traffic necessary to an understanding of the freight services—Division of freight traffic among six commodity groups—Heaviest traffic in mineral and manufacturing sections—Sources of railroad traffic in the *South*: Cotton; Coal; Iron; Petroleum; Phosphate rock; The forests—Sources of railroad traffic in the *Northeastern Section*: Coal; Iron ore and steel; Manufacturing activities; The foreign trade—Sources of traffic in *Central West*: Farm products; Coal and iron ore; Manufactures; Decrease in ratio of outbound to inbound traffic; Sources of traffic in *Rocky Mountain Section*: Increase in local traffic; Coal, copper, and other minerals; The ranches; Irrigation; Significance of rapid growth of cities in Mountain States—Sources of traffic in *Pacific Coast States*: The forests; Grain fields, orchards, and vineyards; The mines; The fisheries; Export and import trade—*Commodities handled by typical railroad companies.*

To understand the freight services of American railways one must have at least a general knowledge of the sources of traffic. The division and general freight agents and the traffic manager of any particular road must have detailed information concerning the territory served by their lines, and should also possess as broad a grasp as practicable of the resources and industries in all parts of the country. Unless the traffic official be thus equipped, he can hardly hope to serve his company efficiently. Likewise the transportation student, whether he be subordinate employee or executive official, who would so comprehend traffic prob-

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lems as to be able to offer intelligent suggestions or to issue wise orders, must know the transportation geography of his country.

This geographical knowledge necessary to a comprehension of American traffic problems and of the traffic policies followed by our railroad companies, like most valuable assets, is not to be gained without careful study. The vast size of our country, the varied character of its resources, the multiplicity of its industries, and the volume and range of domestic trade and foreign commerce, require the transportation expert to enrich his mind with a wealth of detail, and to acquire the power of applying his information constructively to aid in the solution of any problem or in the interpretation of any situation with which he may be confronted. He must, of course, know much more than can be presented in this outline of the geography of American railway freight traffic; details must be filled in either by studying books upon economic and commercial geography, or by travel and personal investigation; or, preferably, by both methods.

Railway freight traffic, the geography of which we are studying, is grouped by the Interstate Commerce Commission into six general classes of commodities—products of agriculture, of animals, mines, forests, manufactures, and merchandise, to which is added a residual category including “other commodities.” This classification of products shows roughly the extent to which rail tonnage is drawn from industries connected directly with basic natural resources—the farms and ranches, mines and forests—and to what extent from manufactures, or secondary industries. It brings out the fact, already noted, that, for 1908, 55.72 per cent of the tonnage is made up of minerals (coal, coke, stone, sand, etc.), not including petroleum which is classed

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as a manufactured article; that manufactures—not counting in flour which is credited to agriculture, nor packing-house products which are placed with animal products—now comprise 13.15 per cent of the traffic; that lumber and other forest products, other than naval stores which are considered to be manufactures, amount to $11\frac{1}{2}$ per cent of the total; and that, despite our prominence in farming, agricultural products—grain and flour, cotton, hay, fruits, and tobacco, together with animal products, live stock, provisions, wool, hides and leather—aggregate only 11.2 per cent of the tonnage handled by the railroads.

Inasmuch as more than two thirds of the tonnage consists of minerals and manufactures, the section of the United States where those commodities are most largely shipped will be the region making the heaviest contribution to rail traffic; and the portions of the country where grazing, farming, or even forest industries lead, will rank much lower in total tonnage. Indeed, in that relatively small part of the United States north of the Potomac and Ohio rivers and east of Illinois and Lake Michigan—including only one ninth of the land area of our country, where mining and manufacturing are most extensively carried on—more than one half of the total tonnage of our railroads originates; whereas the southeastern section lying east of the Mississippi and south of the Ohio and Potomac, although a prosperous region having one and a half times the area of the northeastern district, and including the West Virginia and Alabama mines, the extensive pine and hardwood forests, and broad cotton fields, ships only one eighth of the total tonnage moved by rail. The remainder of the United States with $72\frac{1}{2}$ per cent (nearly three fourths) of the entire land area, and with the heavy ore shipments of northern Michigan, Wisconsin, and Min-

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nesota and the bulky lumber traffic of the far Northwest to swell its total, creates less than one third of the aggregate railroad tonnage. The major share of the freight traffic of our railways originates in a few sections of relatively small area, while over the larger part of the country the tonnage per mile of road and per square mile of territory is comparatively small.

A closer view of the sources of railway freight traffic can be gotten by studying in turn the southern, eastern, central, Cordilleran, and Pacific coast sections of the United States. It will be necessary to limit the study to a review of the principal resources and industries, to some consideration of the markets reached in domestic and foreign trade, and to a general analysis of the traffic of one or more typical railroads in each of the designated regions. It will be well to begin with the Southern States, or the southeastern and Gulf district instead of the north-eastern section, because the economic activities of the South are less complex.

The raising of cotton has been the dominant industry of the *South* for a hundred years; and, although the utilization of mineral and forest resources is broadening the economic life, the growing of cotton and the use of the staple in manufactures now hold and will probably retain first rank. The rapid increase in the number and capacity of cotton mills in the South has latterly added strength to the industrial position of the cotton crop. The cotton belt extends with widening area from Virginia to Texas and Oklahoma, and occupies the Piedmont of the Carolinas, Georgia, and Alabama, the lower Mississippi Valley, with the exception of the lowlands along the Gulf, eastern Texas, most of Arkansas, and parts of Oklahoma, Tennessee, and Missouri. This is the heart of the South the

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home of most of its population, and, until the recent development of commerce and of iron and steel manufactures, it was the theater of most of its economic life.

The tonnage supplied directly by the cotton crop, however, is not large; for the annual and immensely valuable yield of 13,432,000¹ bales weighs only 3,500,000 tons, or one half of one per cent of the total railway tonnage of the country; but a crop having a market value of \$700,000,000 makes possible and necessary an active traffic in other goods into and out of the region where the crop is grown. Cotton culture directly and indirectly accounts for a large share of the traffic of the southern railways.

Of the 13,432,000 bales of American cotton somewhat more than one third (5,000,000 bales), and a rapidly rising share, is worked up in our own mills; and the remainder is exported. Thirty years ago the chief center of the cotton production was in the Piedmont and in the other states east of the Mississippi; and in those days the largest interior market was Atlanta. Charleston and Savannah, as well as New Orleans and Mobile, were then important exporting gateways; but with the extension of the cotton belt into the states west of the Mississippi River, particularly into Texas, Houston has become the leading primary market, with Memphis, Fort Worth, and Dallas also ranking high. Galveston has gained such a lead over other exporting points that, in 1909, her shipments abroad amounted to about three and a half million bales. New Orleans had second place with two million bales, and Savannah third position with less than one million.

¹ The figures as to cotton are for 1908. In 1909 the production was 10,386,209 bales. The decline of twenty-four per cent was largely due to the ravages of the boll weevil. It is believed that the decrease is only temporary.

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The decline in rank of the South Atlantic seaports in the cotton export trade has, however, been due not only to the westward movement of the area of production, but also to the rapid rise of cotton manufacturing in the Piedmont section of North and South Carolina, Georgia, and Alabama, the four states in which most of the cotton mills of the South are located. The North Carolina mills require more cotton than is grown in the state; and those in South Carolina provide a market for nearly three fourths of the home-grown staple. In 1909 somewhat over one third of the cotton spindles in the United States were running in the cotton-growing states, and most of the other sixty-two per cent were in New England, Massachusetts still having nearly as many spindles as there are in the South; but the ratio is changing, the increase being more rapid in the Southern States. The census of the textile industries in 1905 showed that more cotton in weight was used in the southern mills than in those of New England.

This survey of the production and distribution of cotton shows that three changes are taking place in the cotton traffic of the southern railroads; that the tonnage is rising with the rapid increase in the annual crop; that the railways in the western cotton states—those lines converging upon Houston, other Texas markets, and Memphis, and connecting these interior markets with Galveston and New Orleans, instead of the railways in the states east of the Mississippi River—have become the chief carriers of cotton; and that, while the shipments to the seaboard for export grow greater year by year, a larger percentage of the crop is being brought by rail to the mill towns in the Piedmont and by rail and coastwise steamers to the textile centers of New England. The manufacturing progress of the South

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is causing an increasing share of the raw cotton to be shipped to points within the South, while the shipments out of the Southern States to other parts of the United States and to foreign countries, mainly the Orient, are including a steadily enlarging volume of cotton goods.

Despite the fact that the South is chiefly engaged in agriculture, over half the railway tonnage consists of mineral products, chiefly coal, iron ore, petroleum, phosphate rock, and building materials, coal holding first place. The most productive coal field south of the Potomac and Ohio is the one lying mainly in West Virginia and extending into Virginia. From this district is taken five eighths of the coal mined in the South, some of it being shipped by water down the Kanawha River, but most of it by rail, in part to western markets and more largely to the Atlantic seaboard for further distribution. The output of the rich Alabama field, now one sixth of the southern coal, is chiefly used locally in the Birmingham iron industries, but is also shipped to other interior markets in the South, as well as to the Gulf ports. It is expected that the Panama Canal will increase the shipment of Alabama coal to and beyond the Gulf seaboard. The other important southern coal-producing states, Kentucky and Tennessee, find ready markets for their tonnage within or not far beyond their borders. Texas has some coal, and more is obtained in Missouri, Arkansas, and Oklahoma. Taken as a whole, the coal traffic of the southern railways has numerous sources and moves thence in all directions. It is increasing rapidly with the industrial progress of the South.

The all-important iron ore district of the South is close to Birmingham, Ala., where about two thirds of the southern ore is mined, the other third coming mainly from

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Tennessee, Virginia, and Georgia. The Alabama ore is smelted close to the mine mouth, and that of the three other states requires but short hauls to reach the furnaces. The iron ore traffic of the southern railways is relatively unimportant in comparison with the tonnage of this commodity handled by the roads in Pennsylvania and about the Great Lakes, where most of the crude iron, amounting to more than four fifths of the total output of the country and to seven times that of the South, is moved long distances, most largely by joint rail and water routes, but also to some extent by all-rail transportation.

During recent years the southern, and what are usually named the southwestern, states have become the source of thirty-five per cent of the petroleum secured from American wells (12,000,000 tons in 1907). Formerly the oil was obtained almost entirely from the northern Appalachian district; but now the Appalachian section ranks third. In 1909 the California field had the largest output, while the so-called mid-continent field lying mainly in Oklahoma, and extending somewhat into Kansas and northern Texas, held second place. Two thirds of the petroleum output of the southern and southwestern states in 1907 came from Oklahoma, and the other third mainly from Texas, Louisiana, and West Virginia.

As is well known, most of the crude petroleum is transported by pipe lines or by pipe line and tank steamer to the refineries where illuminating oil is prepared, or to the storage tanks of fuel oil; but tank cars as well as pipe lines are used especially in the Louisiana, Texas, and California fields. The oil tonnage of the railways is made up chiefly of the refined products which are handled chiefly in bulk in tank cars, although much is shipped in barrels. Many of the numerous by-products are necessarily put

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into cases or packages for shipment. The services performed by the railroads in transporting oil consist principally of connecting the refineries with the many thousand places where petroleum products are retailed.

The phosphate rock now mined in the United States, amounting to 2,386,000 tons in 1908, is secured from beds in Florida, Tennessee, and South Carolina. The Florida rock, which is three fifths of the total, is taken from the western part of the central portion of the peninsula, and is shipped as crude rock from Port Tampa mainly to foreign countries. The greater part of the Tennessee output is sent to various parts of the United States for domestic consumption, about one sixth being exported by way of Pensacola, Norfolk, and Newport News. The South Carolina beds are near Charleston, and the crude rock there obtained is worked up into fertilizers which are distributed widely within and beyond the United States.

The other large source of the traffic of the southern railways—and it is outranked in tonnage only by coal—is the forests. The forests of the Southern States, which now far outrank the other lumber-producing sections, the north-eastern, the Lake states, and the Pacific slope, in the value and quantity of the annual cut, include two separated areas—the yellow pine belt paralleling the Atlantic and Gulf, from North Carolina to Texas and reaching north into Arkansas, and the hardwood belt covering the Appalachian mountains and extending across the states lying to the west-northwest of the mountains. From these forest sources, a fifth of all the tonnage of the southern railways is secured. The pine belt has the larger output, the leading states being Louisiana and Mississippi, but all the Gulf states make large contributions to the total; while Georgia, North Carolina, and Virginia are also drawn upon heavily.

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Practically all of the larger Gulf and South Atlantic sea-ports have heavy lumber shipments, a part of the product, particularly that of the Gulf ports, being exported while the larger share is shipped coastwise for domestic use. An important feature of the rail traffic of the South is the transportation of large tonnages of lumber from the interior to the seaboard.

The great center of the hardwood lumber industry is Memphis. Tennessee stands eighth, and Mississippi second among the Southern States in value of lumber products; while Arkansas, whose large area includes both pine and hardwood, ranks third. The railroads converging upon Memphis from Tennessee, Arkansas, and northern Mississippi transport large quantities of timber and rough lumber and make that a great milling district, from which the finished product is shipped over a wide territory. Kentucky and West Virginia each produce more lumber than Tennessee does, the output of these states now being marketed, in large part, north of the Potomac and Ohio.

The traffic of the railways in the *northeastern section* of the United States includes such a great variety of commodities and is drawn from so many sources that a discussion of its origin must avoid detail. It will be convenient to consider the northeastern section to include the states north of the Potomac and Ohio and east of Illinois and Lake Michigan—i. e., the first three of the ten territorial groups into which the Interstate Commerce Commission divides the United States in tabulating the mileage, financial and traffic statistics of railways. By giving these limits to the northeastern section, Ohio, Indiana, and the southern peninsula of Michigan are associated with the East instead of the Central West; but this grouping is fully justified by the close connection of these trans-Alle-

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ghany states with the industrial activities and commerce of the middle and New England states.

The large volume of railway freight in the northeastern district, while derived from many sources and composed of a great variety of commodities, consists mainly of four kinds of traffic: (1) Anthracite and bituminous coal, (2) iron ore and steel products, (3) manufactures of many kinds, especially textiles, and machinery, and (4) the export and import trade. By considering the sources and routes of these four classes of traffic we shall account for the greater share—probably four fifths—of the railway tonnage of this part of the United States.

The coal shipments far exceed any other class of traffic in tonnage. Nearly half the tonnage and more than half the value of all the coal mined in the United States is secured in Pennsylvania (200,000,000 tons in 1908); and about six tenths of the total is from Pennsylvania, Ohio, Indiana, and Michigan. Somewhat over one third of the Pennsylvania coal consists of the anthracite secured from three small areas east of the Alleghany Mountains. This coal, both anthracite and bituminous, is distributed generally over the northeastern section of the United States, and is handled mainly by the railroads, the principal exceptions being the shipments coastwise north from Norfolk, Newport News, and Philadelphia, the shipments out of this northeastern part of the United States to the north central section by way of the Great Lakes, and the barging of coal down the Ohio and Mississippi rivers. The great industrial centers such as the Pittsburg district, Cleveland, and the metropolitan Atlantic seaboard cities, are the chief centers toward which the coal moves from the northern Appalachian field.

The mineral traffic, comprising nearly six tenths of the

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total railway tonnage of the northeastern section, consists mainly of coal, coke, and iron ore. The iron ore is derived in part from the mines of New York, Pennsylvania, and New Jersey, and a small amount is imported; but the chief sources of supply for the furnaces and mills of the northeastern states, in which most of the iron manufacturing of the United States is done, are the mines of northern Minnesota and upper Michigan, which are brought close to Ohio, Pennsylvania, and New York by cheap transportation on the Great Lakes. The ore traffic from the Lakes to the furnaces, and shipments of iron and steel and the manifold manufactures thereof from the mills to all parts of the country comprise a volume of freight second in tonnage only to that created by coal and coke.

It is the manufacturing activities of the northeastern states which directly and indirectly account for the heavy railway tonnage of that region. These industries are not only of great variety, but are generally distributed over the larger part of the district; and while railway traffic is largest in such industrial sections as central Indiana, eastern Ohio and western Pennsylvania, southeastern Pennsylvania, northern New Jersey, southeastern New York, and southern New England, the manufactures of other parts of the Northeast give rise to no small rail tonnage. Without attempting to enumerate even the more important classes of manufactures other than iron and steel, mention may be made of machinery and tools which are made in many parts of the section under consideration; of the ship-building plants on the Great Lakes and along the Atlantic seaboard; and of cotton, woollen, and silk textiles, which mills are located chiefly in the region extending from Portland, Me., to Philadelphia. All of the cotton and silk, and nearly all the wool, used in the textile mills are brought

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from a distance; and the fabrics and carpets are marketed in every part of the United States, and to some extent abroad. The tonnage of rail traffic directly created by the textile industries is not large; but the concentration of population necessitated by these industries results in a great enlargement of the freight and passenger business of the railroads.

The major share of the foreign trade of the United States, both export and import, being handled through the north Atlantic ports, our foreign commerce contributes an important part of the traffic of the railroads connecting the Mississippi Valley with the seaboard from Portland to Norfolk. The export tonnage, which greatly exceeds that of the imports, formerly consisted mainly of the results of agriculture; but, while the products of our farms—cotton, cereals, fruits, animals, animal products, etc.—still account for about six tenths of the value of the commodities we sell abroad, our exports are steadily becoming more diversified with the progress of our manufactures, particularly those of iron and steel, which now contribute one tenth of the total value of our foreign sales.

The export shipments from the United States are more evenly distributed among our several seaports than are the imports; nevertheless one third of the outbound commerce passed through New York, while Baltimore, Boston, and Philadelphia, although outranked by Galveston and New Orleans, handle one sixth of the exports. Much more than half of our outgoing foreign trade moves through the ports on the Atlantic coast north of Hampton Roads—the ports reached by the trunk line railroads.

The import traffic is more concentrated than are the export shipments. Six tenths of all our imports enter via New York; and more than three fourths of the total are

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brought in through the four largest North Atlantic ports. The commodities imported are of great variety, and consist largely of high-class traffic; they are distributed generally over the country, and their transportation is eagerly competed for by the railroads of the northeastern section.

Railway traffic in the *Central West*, that section lying between Indiana and Lake Michigan on the east and the Rocky Mountains on the west, has a higher percentage of products of agriculture than does any other large subdivision of the country. This is the center of the cereal production in the United States, and is the district leading in the value of farm animals. Its principal railroads are popularly called the "granger lines."

These roads converge mainly upon four great centers (there are numerous more local foci), the greatest center being Chicago, or, more broadly considered, the southern and western shores of Lake Michigan; Minneapolis on the Mississippi, the great milling city, and Duluth and Superior, the transfer points at the head of Lake Superior, draw to them a large traffic from the upper portion of the central west; while St. Louis, noted for its manufactures and jobbing trade; and Kansas City and Omaha, second only to Chicago in packing-house products, are the great traffic foci in the southern part of the central west.

But large as is their traffic in grain, animals, and animal products, the railways of the central west have a greater tonnage of minerals. Illinois with its 48,000,000 tons of annual output (1908) ranks second among the coal-producing states, while Iowa and Kansas with a combined production of 13,000,000 tons stand ninth and tenth in the list. Eight tenths of the iron ore of the United States comes from the three states in the Lake Superior district, and while most of this ore is taken by a short rail-haul

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to Lake Superior, it none the less swells the tonnage of the railroads. The mineral traffic of the railways of the central west, mainly coal, iron ore, and copper, has a tonnage more than double that of agricultural commodities, animals, and animal products.

While in the central west, as a whole, manufactures are as yet relatively undeveloped, there are certain sections and numerous cities in which manufacturing is carried on so extensively as to cause the railroads serving them to transport a large tonnage of mill and factory products. Illinois, with its rich coal fields, with the cheap lake transportation to it from the ore mines of the Superior district, with its population of nearly 6,000,000, and its great metropolis of Chicago stands third in the list of manufacturing states. Missouri ranks seventh and Wisconsin ninth. Portions of these three states and some sections of the other commonwealths of the central west have become the home of a large variety of industries whose products are marketed generally over the United States and to a surprising extent in foreign countries.

At the southern end of Lake Michigan is an especially favored location for manufactures. Water-borne ore and near-by coal are brought together cheaply, while more than a score of railroads bring hither, over their converging lines, the natural products of the central west and take hence to all points of the compass the output of mill and factory. Like the Pittsburg district and the section along the south shore of Lake Erie, the Chicago district, within which may properly be included the new city of Gary, Ind., occupies a strategic position industrially, and its rapid progress is creating a vast railway traffic in nonagricultural commodities. A similar influence is being exerted by Milwaukee, Minneapolis, Duluth, St. Louis, and other

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cities. The traffic of the railways in the upper half of the Mississippi Valley is rapidly becoming diversified, as it flows into and out of an increasing number of industrial centers.

This productive middle portion of the United States located centrally within a broad continent, from 500 to 1,500 miles from the ocean, has a surprisingly large volume of trade with our seaboard states and with foreign countries. Highly efficient railroad lines connect it with the Atlantic, the Gulf, and the Pacific. Formerly, the Atlantic roads and the lakes carried out most of its exports, which consisted chiefly of products of the farm; but now the Gulf route is taken by a large percentage of the cereals, and the Pacific lines also share in the outbound flour and provision tonnage. Meanwhile, the growth of population in the central west, the opening of its coal and iron mines, and the development of its manufactures, have lessened the importance of its exports of agricultural products, have enhanced the volume of manufactures—agricultural and mining machinery, engines, iron and steel, both crude and wrought into wares of many shapes and uses, vehicles of all kinds, etc.—and have enlarged the volume and variety of the commodities brought into the section from other parts of the United States and from abroad. In consequence, the trains that now take the products of the central west to the Atlantic and Pacific return with a profitable “backload”; and though this cannot yet be said of the roads to the Gulf, the northbound traffic is increasing, and will grow more rapidly with the opening of the Panama Canal, and with the progress of our trade in Latin-American countries.

In the *Rocky Mountain section* railway tonnage must always be less than in other parts of the country; although

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it is probable that most persons underestimate the traffic possibilities of the mountainous and arid West. At the time of the construction of the earlier Pacific roads, the great Cordilleran plateau was regarded mainly as a barrier to be surmounted to reach the traffic of the Pacific coast; but now the interior traffic sources are recognized to be of greater importance. Prosperous roads like the Denver and Rio Grande have depended mainly upon local rather than upon through traffic; and at the present time the northern transcontinental lines derive the larger share of their profits from the traffic of the places along their lines. This is not yet true of the southern lines to the Pacific, but even they are prospering increasingly, because of the growth of local business.

The internal sources of traffic are the mines, ranches, irrigated districts, and the trade of such collecting and distributing centers as Denver, Salt Lake City, Chéyenne, Helena, Spokane, Albuquerque, El Paso, etc.

Coal naturally leads other minerals in the volume of tonnage; and one sure evidence of the industrial progress of the mountain states is the increase in the amount of coal mined, which has doubled in ten years. Colorado ranks eighth among the coal-producing states and Wyoming twelfth. Five per cent of the coal mined in the United States, and one tenth of that secured outside of Pennsylvania, comes from the Rocky Mountain states, not including those on the Pacific coast. More than two thirds of our copper is mined and smelted in the Cordilleran states, mainly in Arizona, Montana, and Utah, the only important copper state outside of this section being Michigan, from which one fourth of the total output is secured. The mining of gold, silver, and lead, likewise, gives rise to an important share of the rail traffic of the mountain district.

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The mining camps are distributed generally among the Cordilleran states, Colorado holding first place in the output of gold and silver and in the total production of minerals.

The ranches are the second source of the traffic of the railroads in the Cordilleran section. The eight states and territories comprising most of the Cordilleran plateau, Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, and Idaho, contain nearly half of all the sheep in the United States; and if the three Pacific coast states which are largely within the mountain district be included, the sum is over three fifths of the total for the country. Montana and Wyoming lead all the other states in number of sheep. The number of cattle in these mountain commonwealths, while not equal to those on the Texan ranches or the farms of Iowa and other Mississippi Valley states, is none the less large, amounting to about one sixth of the total for the United States.

It is, however, the development of irrigation that promises most for the growth of the rail traffic of the mountain states. Such highly fertile sections as the Salt Lake Valley in Utah, the valleys of the Salt River and other streams of southern Arizona and New Mexico, the Imperial Valley of southern California, the Truckee-Carson district of western Nevada, the Uncompahgre Valley of western Colorado, and the irrigated portions of Wyoming, Montana, Idaho, and eastern Washington—these are to be the home of several millions of people and the sources of large railway traffic. The irrigation of those districts in the arid West to which water can be supplied is as yet only well begun; and while the irrigable sections comprise only a small percentage of the total area of the great West, the presence of these highly productive and thickly populated valleys scat-

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tered over the wide Cordilleran territory will require an increasing railway mileage and traffic.

Nothing more clearly indicates the increasing railway traffic of the mountain section than does the growth of such cities as Denver and Salt Lake City. Each place is the center of converging and radiating railway systems that unite it not only with the Pacific coast and the Mississippi Valley, but also with most parts of the Cordilleran region. These cities and numerous other lesser, but growing, intramontane railway and population centers evidence most clearly the economic progress of the West.

The chief sources of railway traffic in the *Pacific Coast States* are the forests, the grain fields, the fruit farms, the ranches and the mines, and the inshore and deep-sea fisheries. The Alaskan trade and the growing business with the Orient and Mexico are other, though minor, sources. The products from these sources are in part shipped by sea to the Atlantic and across the Pacific; and in larger volume eastward by rail to markets in the Cordilleran, central, and eastern sections of the United States. The Pacific seaboard states, which formerly had little commercial intercourse with other parts of the country, now outrank all other sections in the width of the range of their commerce. The past development of these states has been rapid; but their future growth, aided by the large number of transcontinental railroads in service or nearing completion, by the enlarging markets in the mountain states, by the cheaper transportation by way of the Panama Canal to the American and European Atlantic seabords, and by the steady tide of immigrants from Europe, will be even more phenomenal. It is easy to understand why so much capital is now being spent in adding new lines to the Pacific. The St. Paul was opened in 1909; the Western

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Pacific, from Salt Lake City to San Francisco in 1910; and the Kansas City, Mexico and Orient, to the west coast of Mexico, will soon be in operation.

The lumber from the magnificent forests of Washington, Oregon, and northern California is the largest single item of railway tonnage. The market for this lumber is no longer confined to places reached by water carriers, but includes the entire western part of the United States; and, for the most expensive grades, the Eastern States. The rates eastward from the great Northwest are especially low, because lumber is largely handled as a "backload" in cars that would otherwise run empty. Washington is now the leading lumber state, its output being one twelfth of that for the entire country.

The production of wheat in California and Oregon has declined during recent years with the substitution of intensive for extensive farm cultivation; but in Washington the annual crop is still increasing, that state now ranking sixth in wheat production. All three states are growing increasing amounts of barley, the other important cereal crop of the section, California now having a long lead over all other states in barley production.

In southern California, and in portions of central California, and Oregon, the orchards and vineyards originate the major share of the rail tonnage. The California green fruits are now sold in a well-organized market that includes the entire United States; her canned and dried fruits, wines, raisins, olives, olive oil, and almonds have an even wider sale. Horticulture and viticulture are the chief sources of wealth in California, and in parts of Oregon. The present large shipments of green and prepared fruits will undoubtedly increase more than proportionally with the growth in the population of the United States. Further-

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more, the development of the Pacific coast states in fruit production means that they will have sections containing relatively closely settled communities of prosperous people, and the rail traffic, inbound as well as outbound, will consist largely of high-class, profitable freight.

While California has long since ceased to be preëminently a mining and a grazing state, it is second only to Colorado and Alaska in the output of gold, unless, perchance, the mines at Goldfield may have now given Nevada the third place. California is now the ranking state in the output of petroleum, and the market value of the 45,000,000 barrels of this mineral annually obtained from the California wells is nearly equal to the value of the gold yearly mined. For industry and commerce, the petroleum is far more important than the gold. It is used instead of coal in the locomotives, and to a large extent in stationary engines; and it constitutes one of the larger items of railway traffic in the state.

Washington is the only one of the Pacific coast states that has coal enough to be of commercial importance, and its mines have an annual output of less than 4,000,000 tons. The mines of Vancouver, which yield two and a half times this quantity and a product of better quality, are the chief source of the coal used on the Pacific coast. The Vancouver coal, however, is mainly distributed by water and contributes but little to the tonnage of American railways.

The grazing industry in the Pacific coast states, particularly in Oregon and California, is important, although the ranches are giving place to farms. For some time to come, California and Oregon will have surplus wool, sheep, and cattle for shipment to other states.

The fisheries of the Pacific coast states and Alaska yield an annual product worth \$17,200,000, and constitute

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an important industry. The salmon catch accounts for over two thirds of the total value, and formerly this had its chief centers in the Columbia River and the tributaries of Puget Sound, but now the waters of British Columbia and Alaska are more productive, the value of the Alaskan salmons being more than double that derived from the waters of Washington and Oregon. The trade in this fish, both fresh and canned, including the Alaskan product, is handled through the ports of our west coast states, from whence it is distributed generally over the United States.

The rapid growth of the export and import commerce handled at the Pacific ports of the United States has contributed largely to the tonnage and earnings of the transcontinental lines; for the reason that a large share of the exports are brought from the farms of the upper Mississippi Valley, the cotton mills and plantations of the South, and the manufactories of the central West and the East. To an even larger degree, the imports are carried over the Rocky Mountains by rail for distribution throughout the central and eastern sections of the country. Their traffic with trans-Pacific countries is large enough to have caused most of the transcontinental railway companies to operate lines of steamers connecting their Pacific ports with the Orient.

The railways that serve our western tier of states derive their traffic from numerous sources; and the indications are that each of the main sources—the industries of the states themselves, the markets of the Cordilleran section, the maritime trade with Mexico, Canada, Alaska, Hawaii, the Orient, and Australia—will contribute an increasing volume of traffic for movement within the Pacific coast states, and across the mountains to and from the eastern half of the United States. The western railroads

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have passed the period of doubtful experiment; they rest upon a sure traffic foundation.

The general facts brought out in the foregoing brief survey of the main sources of traffic in the five large physical subdivisions of the United States may be illustrated and their effects noted by a summary tabular analysis of the principal classes of *commodities handled by typical railroad systems* located in different sections of the country. The data presented in the table on page 44 are taken from the reports which the carriers are obliged to make to the Interstate Commerce Commission in regard to the classification of their tonnage.

The sources of the tonnage and the traffic differences of the lines listed in the table are clearly evident. The Central of Georgia, located in the heart of the cotton belt of the South, the Saint Paul in the upper Mississippi Valley, the Rock Island, and the Santa Fé roads in the central and southwestern trans-Mississippi sections—the last three systems extending throughout the wheat and corn districts—have a far larger percentage than the other systems do of traffic in agricultural products. Their tonnage of products of agriculture is second only to, and not greatly less than, that of mineral products, while the percentage of animal products, in the case of the St. Paul, Rock Island, and Santa Fé is from five to ten times that of the other roads.

The percentages for mineral traffic are especially instructive. On all the seven systems, even the two “granger” lines and the Santa Fé, the minerals have a greater tonnage than does any other class of commodities, while on the Chesapeake & Ohio, a prominent soft-coal carrier, the mineral percentage is nearly seventy-four. It is evident that the Pennsylvania Railroad, which is the greatest freight carrier in the world, must serve the prin-

Classification of Freight Tonnage of Typical Railroads, 1908.

	Pennsylvania Railroad.	Chesapeake and Ohio.	Southern Railway.	Central of Georgia.	St. Paul.	Rock Island Lines.	Santa Fe.
Total tonnage....	214,941,159	18,511,362	22,133,389	4,555,124	27,499,704	17,145,657	17,220,597
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Products of Agriculture....	4.76	4.00	12.11	22.18	21.338	25.00	23.08
Products of Animals.....	1.56	.74	1.25	1.36	6.413	7.76	8.24
Products of Mines	66.03	73.65	39.01	24.75	28.903	29.30	28.39
Forest Products..	4.82	9.21	17.34	17.77	13.496	12.57	13.67
Manufactures....	19.29	5.43	15.76	22.29	17.815	18.14	19.81
Merchandise.....	.90	2.98	8.94	7.09	12.035	6.77	6.81
Miscellaneous....	2.64	3.99	5.59	4.56		.46	
Total.....	100.00	100.00	100.00	100.00	100.00	100.00	100.00

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cial mining and manufacturing section of the United States; 66.03 per cent of its tonnage consists of minerals, which, together with the manufactures, comprise almost seven eighths of the company's vast freight traffic. Its coal and coke shipments alone exceed 118,000,000 tons.

The lumber traffic is relatively greater on the two southern roads than on the others included in the table, because of the large output of the pine and hardwood forests of the Southern States. One eighth of the tonnage of the "granger" roads is lumber, this large traffic being due to scarcity of timber in the prairie states which are obliged to secure nearly all of their lumber from a distance.

The percentage of manufactures in the traffic of the southern and western railroads is a significant fact. Roads located as the Pennsylvania is will naturally have a large tonnage of manufactures, and a coal road like the Chesapeake & Ohio a small volume; but the systems which serve regions whose industries, until recently, were almost exclusively agricultural, report their tonnage to contain a relatively large percentage—and it is an increasing one—of manufactures. While there are conspicuous instances of the concentration of certain industries in specially favored localities, the evolution of industry in the United States is spreading mills and factories generally over the country. Cheap and efficient railway transportation makes possible the concentration of industry when that is most economical, and it also enables manufactories to be started in hundreds of places where they otherwise could not exist. The progressive diversification of industry throughout the United States is enriching the tonnage of the railroads with an enlarging percentage of the higher and more profitable classes of freight and is establishing a broader and more stable traffic basis for all our railway systems.

CHAPTER III

VOLUME AND EARNINGS OF AMERICAN RAILROAD TRAFFIC

Passenger and freight traffic of American railroads, 1899, 1907, 1909—Freight traffic by commodity groups and by sections of the United States, 1908—Charts showing growth of freight and passenger traffic, 1902 to 1908—Analysis of operating revenues, 1909—Summary of operating revenues, operating expenses, and taxes, 1909 and 1908—Condensed income and profit and loss accounts, 1909—Analysis of operating expenses, 1909—References.

IN discussing the sources of railroad freight traffic in the United States, some indication was given of the amount of tonnage handled. It will be well, before taking up the description in detail of the services of railways, to measure definitely, and as concretely as may be, the volume and earnings of the entire railroad traffic—freight, passenger, express, and mail. The presentation must necessarily be statistical but need not be long, because official and private publications furnish readily available sources of information.

The latest available statistics of the Interstate Commerce Commission are given. For the most part these figures are for the fiscal year ending June 30, 1909: but the latest complete and final analyses of traffic statistics (summarized in Table II) are for 1908, those for the fiscal year 1909 not being published until the close of 1910 or the beginning of 1911.

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The passenger and freight traffic of American railways during the year ending June 30, 1909, and its growth since 1899 are summarized in Table I, which also includes figures for 1907, the year when freight tonnage reached the highest point yet attained. The business depression that began in October, 1907, so checked industry as to shrink railway tonnage in 1909 below the volume it had in 1907. The effect upon passenger travel of such an interruption to business as occurred in 1907 is much less severe than upon freight traffic.

TABLE I.—*Passenger and Freight Traffic of American Railways during the Years Ending June 30, 1899, 1907, and 1909*

	YEAR.		
	1899.	1907.	1909.
Number of fare passengers carried.....	523,176,508	873,905,133	891,472,425
Number of passengers carried one mile.....	14,591,327,613	27,718,554,030	29,109,322,589
Number of tons of revenue freight..	943,715,372	1,796,336,659	1,556,559,741
Number of tons carried, excluding tonnage received from connecting roads and other carriers.....	501,527,375	977,489,440	826,492,765 ⁽¹⁾
Number of tons carried one mile.	123,667,257,153	236,601,390,103	218,802,986,929

¹ This does not account for all of the 1,556,559,741 "tons of revenue freight," of which 96,859,042 tons were "unassigned."

Each railway receives freight both from shippers and from other railroads; hence, in order to determine how many tons of freight were shipped upon American rail-

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roads considered as a single system, it is necessary to deduct from the sum of the tonnage reported severally by the operating railway companies the tonnage received from connecting roads and other carriers. In 1907 the railways received from shippers nearly a billion tons of freight; the following year the total had temporarily dropped over a hundred million.

As far as it is practicable to do so, the Interstate Commerce Commission groups the freight traffic reported by the railroad companies into six general classes of commodities—products of agriculture, of animals, of mines, of forests, manufactures and merchandise. In Table II the railway freight traffic for the year ending June 30, 1908, is stated according to this classification, and the tonnage for the United States as a whole is further subdivided among three territorial groups, the northeastern, southern, and western sections of the country. About ninety per cent of the total railway tonnage reported is apportioned among the six general classes of commodities and an indefinite category of “miscellaneous” articles.

The significance of the main facts presented in Table II was considered in the preceding discussion of the sources of the freight traffic of our railroads. As the report of the Interstate Commerce Commission states, “A comparison of the ratios which the several classes of commodities bear to the total tonnage in the several divisions is interesting and instructive.”

By charting the growth of passenger traffic and of freight traffic during recent years in such a way as to show the increase in passenger miles and in ton miles in relation to the increase in train miles and miles of railroad, some instructive facts regarding the development of the service and the efficiency of our railways become apparent.

TABLE II.—Summary Showing Freight Traffic Movement, by Class of Commodity, Originating on Line of Reporting Roads—United States and by Divisions—Year Ending June 30, 1903.

Class of Commodity.	United States.		Division I. Groups I, II, and III. Territory north of Ohio and Potomac Rivers and east of Illinois and Lake Michigan.		Division II. Groups IV and V. Territory south of Ohio and Potomac Rivers and east of lower Mississippi River.		Division III. Groups VI, VII, VIII, IX, and X. Territory west of Lake Michigan, Indiana, and lower Mississippi River.	
	Tonnage reported as originating on line.	Per cent of aggregate.	Tonnage reported as originating on line.	Per cent of aggregate.	Tonnage reported as originating on line.	Per cent of aggregate.	Tonnage reported as originating on line.	Per cent of aggregate.
Products of Agriculture	Tons. 69,665,943	8.74	21,372,569	5.03	8,971,647	7.89	39,321,727	15.19
Products of Animals	19,635,150	2.46	7,635,961	1.80	939,489	0.83	11,059,700	4.27
Products of Mines	444,216,023	55.72	265,747,801	62.58	57,779,823	50.84	120,688,399	46.61
Products of Forests	90,475,081	11.35	22,955,349	5.41	24,279,663	21.36	43,240,069	16.70
Manufactures	104,860,269	13.15	68,605,936	16.16	12,213,459	10.75	24,040,874	9.28
Merchandise	32,222,678	4.04	14,402,311	3.39	5,661,663	4.98	12,158,704	4.69
Miscellaneous	36,140,955	4.54	23,902,631	5.63	3,807,331	3.35	8,430,993	3.26
Grand total	797,216,099	100.00	424,622,558	100.00	113,653,075	100.00	258,940,466	100.00

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This is done in Charts I and II¹ referring respectively to passenger and freight traffic. In order to understand these charts the fact must be kept in mind that the lines show relative *rates*, or percentages, of increase for each of three different items unlike in kind and quantity. In each chart the three curves have a common point of origin—i. e., the *year* 1902, and the percentages charted by each line are the percentages of increase year by year, over the year 1902, not over the preceding year.

It is shown by Chart I that the number of passengers carried one mile upon American railways rose from 19,000,000,000 in 1902 to 28,000,000,000 in 1908, the increase

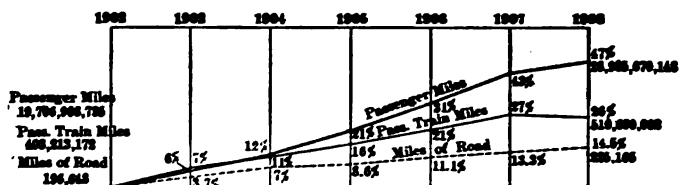


CHART I.—Relative Increases, Passenger Miles, Passenger Train Miles, and Miles of Road, Railways of the United States, 1902 to 1908

being forty-seven per cent; passenger train miles grew from 403,000,000 to 510,000,000, the gain being twenty-six per cent; while the increment in railway mileage was 14.5 per cent. It is evident that an increasingly greater use was made year by year of each mile of railroad, for the number of passenger miles increased $3\frac{1}{2}$ times as fast as did the line mileage. It is also clear that the average number of persons per train must have risen, for an expansion of forty-seven per cent in passenger miles necessitated only twenty-six per cent increase in passenger train miles. The

¹ These charts are from a paper by Mr. Ray Morris in the *Railroad Age Gazette*, vol. xlvii, pp. 1277-79, Dec. 31, 1909.

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figures in this and in Chart II are taken from Poor's Manual of Railroads and are slightly different from those published by the Interstate Commerce Commission and which are cited in other parts of this chapter.

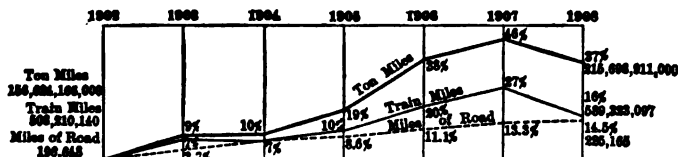


CHART II.—*Relative Increases, Ton Miles, Freight Train Miles, and Miles of Road, Railways of the United States, 1902 to 1908*

The increase in ton miles during the five years from 1902 to 1907 was forty-six per cent, but the average freight train load grew heavier so rapidly that the traffic required an addition of only twenty-seven per cent to train miles. The two charts bring out very clearly the fact that freight traffic is much more sensitive to business conditions than is the passenger business. During 1908 there was a moderate gain in passenger miles, although the railways economized by decreasing train mileage—i. e., by running fewer passenger trains; but the ton mileage of freight traffic fell off sharply, accompanied, however, by a parallel reduction in train mileage.

The total operating revenues of American railroads for the year ending June 30, 1909, and the receipts from the freight, passenger, mail, express, and from the other minor services are stated in Table III (see page 52).

The freight revenue, or earnings of the freight trains and switching engines, accounts for seven tenths of the total, while the receipts from fares, mail, express, excess baggage, and milk traffic, and from such parlor and chair cars as are owned by the railway companies—i. e., the entire

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TABLE III.—Analysis of Operating Revenues for the Year Ending June 30, 1909—United States¹

ITEM.	Amount. ²	Proportion to total operating revenues.
		<i>Per cent</i>
Freight revenue	\$1,677,614,678	69.34
Passenger revenue	563,609,342	23.48
Mail revenue	49,380,783	2.03
Express revenue	59,647,022	2.45
Excess baggage revenue and milk revenue (on passenger trains)	13,694,171	.54
Parlor and chair car revenue and other passenger-train revenue	3,989,612	.15
Switching revenue	21,599,256	.87
Special service train revenue and miscellaneous transportation revenue	7,833,852	.31
Total revenue from operations other than transportation	19,756,577	.79
Joint facilities revenue—Dr.	500,301	.03
Joint facilities revenue—Cr.	2,052,546	.07
Total	\$2,418,677,538	100.

¹ Excludes returns for switching and terminal companies and for a few roads the reports of which were not sufficiently complete for use in this summary.

² 232,981.11 miles of line (average mileage operated) represented.

passenger train revenues—amount to somewhat less than three tenths (28.65 per cent) of the entire operating income. Table III gives the revenues in 1909, other than those of switching and terminal companies, for an average operated mileage of 232,981 miles of line.

The revenues received from operation and the sums paid out for operating expenses and taxes are comparatively shown for the years ending June 30, 1909, and 1908, in Table IV. The table also states what portions of the total revenues were derived from the freight, passenger, and other transportation services.

TABLE IV.—Summary of Operating Revenues, Operating Expenses, and Taxes for the Years Ending June 30, 1909 and 1908

ITEM.	Year ending June 30, 1909.			Year ending June 30, 1908.		
	Amount.	Ratio to total operating revenues.	Average per mile of line. ¹	Amount.	Ratio to total operating revenues.	Average per mile of line. ¹
Freight revenue.....	\$1,677,614,678	<i>Per cent</i> 69.34	\$7,200.64	\$1,659,055,663.18	<i>Per cent</i> 68.51	\$7,271.30
Passenger revenue.....	563,609,342	23.48	2,419.12	566,245,657.84	23.38	2,481.74
Other transportation revenue.....	157,696,941	6.39	676.95	172,560,040.56	7.13	756.30
Nontransportation revenue.....	19,756,577	.79	84.79	23,680,643.18	.98	103.79
Total operating revenues.....	2,418,677,538	100.00	10,381.50	2,421,542,004.76	100.00	10,613.13
Less total operating expenses.....	1,599,443,410	66.16	6,865.12	1,687,144,975.74	69.67	7,394.42
Rail operations: Net revenue.....	819,234,128	33.84	3,516.38	734,397,029.02	30.33	3,218.71
Outside operations: Net revenue.....	3,936,969	.....	16.89	5,797,161.11	.....	25.41
Total net operating revenue.....	823,171,097	.....	3,533.27	740,194,190.13	.....	3,244.12
Taxes.....	85,139,554	.....	365.46	83,775,869.26	.....	367.17
Operating income.....	738,031,543	.....	3,167.81	656,418,320.87	.....	2,876.95

¹ On basis of average mileage operated during the year, 232,981.11 miles; mileage operated at end of year, 235,402.09 miles.

² On basis of average mileage operated during the year, 228,164.80 miles; mileage operated at end of year, 229,932.36 miles.

THE TRAFFIC OF AMERICAN RAILROADS

The effects of the business depression that began in the autumn of 1907 had not been overcome by the middle of 1909, as is evidenced by the fact that the total operating revenues of the railways for the fiscal year 1909 were practically the same as for the previous year, although the average operated mileage had increased 4,816 miles. The receipts per mile of line in 1909 were lower than in 1908. The enforced economy of the railways in expenditures for "maintenance of way and equipment" and for "operation" brought the ratio of operating expenses to operating revenues down from the abnormally high point of nearly seventy per cent in 1908 to an average ratio of a little more than sixty-six per cent in 1909. The monthly reports made by individual railway companies during 1910 indicate that the traffic and earnings of the railways of the United States have about regained the position they held before the depression of 1907-9.

The gross and net earnings of American railways for the fiscal year 1909, the disposition made of the corporate income, and the consequent status of the profit and loss account at the close of the fiscal year, are concisely presented by the Interstate Commerce Commission in Table V (see opposite page).

Little need be said in explanation of Table V. Aside from the revenues obtained from "rail" and "outside" operations there is "other income" of a large amount, which consists mainly of interest and dividends on securities owned by the railway corporations and of profits derived from mineral and other properties belonging to the railroad companies. It will be noted that dividends are paid not only from income, but also, to some extent, from surplus, thus reducing largely the amount of income actually to be credited to profit and loss. However, the balance

VOLUME AND EARNINGS OF TRAFFIC

TABLE V.—Condensed Income Account and Profit and Loss Account of Operating Roads for the Year Ending June 30, 1909

INCOME ACCOUNT		
Rail operations:		
Operating revenues	\$2,418,677,538	
Operating expenses	1,599,443,410	
Net operating revenue		\$819,234,128
Outside operations:		
Revenues	54,527,763	
Expenses	50,590,794	
Net revenue from outside operations		3,936,969
Total net revenue		823,171,097
Taxes accrued		85,139,554
Operating income		738,031,543
Other income		199,041,118
Gross corporate income		937,072,661
Deductions from gross corporate income		548,908,546
Net corporate income		388,164,115
Disposition of net corporate income:		
Dividends declared from current income	233,069,739	
Additions and betterments charged to income	23,675,622	
Appropriations to reserves and miscellaneous items	20,632,313	
Total		277,377,674
Balance to credit of profit and loss		110,786,441
PROFIT AND LOSS ACCOUNT		
Credit balance on June 30, 1908		720,423,740
Credit balance for year 1909 from income account		110,786,441
Total		831,210,181
Dividends declared out of surplus		38,973,760
Difference		792,236,421
Other profit and loss items—debit balance		23,708,013
Balance credit, June 30, 1909, carried to balance sheet		768,528,408

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sheet shows a credit at the end of the fiscal year 1909 in excess of the credit balance for 1908. This is a good showing in view of the unfavorable business conditions prevailing in 1908 and 1909.

The analysis of operating expenses with reference to the five general classes of expenditures, and the ratio of each item to the total operating revenues are shown for the year 1909 in Table VI:

TABLE VI.—Analysis of Operating Expenses for the Year Ending June 30, 1909. Average Operating Mileage, \$33,002.67.

ITEM.	Amount	Proportion to total operating revenues.
Maintenance of way and structures..	\$308,450,105	12.76
Maintenance of equipment.....	363,912,886	15.06
Traffic expenses.....	49,287,148	2.05
Transportation expenses.....	814,088,149	33.66
General expenses.....	63,677,378	2.63
Unclassified.....	27,744	.....
Total.....	\$1,599,443,410	66.16

The gross revenues derived from the operation of American railroads doubled during the prosperous decade beginning with 1898; the average earning, or rate, per ton per mile remained almost constant while freight traffic increased a hundred per cent; the gain in the number of passengers carried one mile was quite as rapid and the receipts per passenger mile in 1907 were more, and in 1908 but slightly less than in 1898. Such a rapid increase in traffic at constant rates would naturally have caused the operating expenses per unit of traffic, and thus the ratio of operating expenses to total income from operation, to decline, in accordance with the well-known law that an increase in tonnage or in the number of passengers, other

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factors of expense remaining constant, does not proportionally increase costs of operation. But the other factors have not been constant; there has been a great advance in the cost of materials and in wages. The normal diminution in the cost of a unit of transportation due to the expansion of traffic has been fully offset by the rising prices of materials, equipment, and labor. Indeed, the ratio of operating expenses to operating revenues has ranged somewhat higher the last few years than it did a decade ago.

The great increase in traffic and gross revenue, having been accompanied by but a slight rise in the operating ratio, has caused net revenues to advance proportionally with gross income from operation. A portion of this expanding net income has been devoted to betterments and extensions; and another share has gone to pay interest and dividends on the large volume of new capital required to provide the facilities necessary to handle the growing traffic. The exact amount of new capital invested in our railroads during the past decade would be difficult to determine. Capitalization increased fifty-five per cent from 1898 to 1908; and the greater part of this expansion was caused by the sale of new securities at or above par.

The prosperity of American railroads since 1898 (temporarily but not disastrously checked in 1908 and 1909) has greatly added to the investment value of their securities. It is extremely fortunate for the public that this has been so, and it is likewise highly important that the future net earnings of the railroads should be such as to make railway securities attractive investments. The rapidly growing transportation needs of the country will require the expenditure of a vast amount of capital upon railway facilities during the next quarter century.

THE TRAFFIC OF AMERICAN RAILROADS

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1. Publications of the Interstate Commerce Commission:

- (a) "Twenty-first Annual Report on the Statistics of Railways in the United States for the Year ending June 30, 1908."
- (b) "Bulletin (No. 5) of Revenues and Expenses of Steam Roads in the United States, Compiled from Monthly Reports Covering the Years ending June 30, 1909 and 1908."
- (c) "Twenty-third Annual Report," December 21, 1909.

2. *Railroad Age Gazette*, vol. lxvii, pp. 1277-1279, December 31, 1909.

PART II

**THE FREIGHT SERVICE:
ITS ORGANIZATION AND MANAGEMENT**

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CHAPTER IV

ORGANIZATION OF THE FREIGHT TRAFFIC DEPARTMENT

Leading departments of the railway organization—General organization of the New York Central—Of the Pennsylvania Railroad—Of the Harriman lines—Divisional and departmental types of organization—Traffic organization of the Pennsylvania Railroad, 1910—Duties of the Pennsylvania's Freight Traffic Manager and General Freight Agents—Of the Division Freight Agents and Freight Solicitors—Functions of the Union Line—Freight traffic organization of the New York Central—Place of fast freight lines in traffic organization—Time and preference freight—Methods of developing traffic—Traffic and legal officials represent company in relations with the public—References.

THE purpose of this and the other chapters in Part Two of this volume is to describe and explain the organization and management of the services performed in handling the freight traffic. A subsequent section will contain an account of the freight classifications and of the systems of rates that have developed in response to the needs made manifest in the practical conduct of railway transportation.

Every railroad company subdivides its activities more or less sharply among five to seven departments. At the head, with supervision over all branches of the service, is the executive department, including the offices of the President and Vice Presidents. The President is directly responsible for the supervision and general direction of all departments and is assisted by the Vice Presidents. Directly subordinate to the President is the legal staff in charge of a general Counsel who may be, but usually is not, a Vice

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President of the company, and the Secretary. The special administrative departments are the financial, including the office of the Treasurer, the accounting in charge of the Comptroller, the operating which ordinarily comprises the maintenance and the transportation branches of the service, both being under the General Manager; the engineering, real estate, and purchasing departments, each with its executive head; and the traffic department, administered either by one or two Traffic Managers.

Each of these special departments is supervised by a Vice President, of whom, in the largest companies, there may be as many as five, in charge severally of finances, accounts, engineering, transportation, and traffic. There are, however, more companies with three than with five Vice Presidents, the more usual plan being to place the finances and accounts under one Vice President, the engineering and transportation branches under another, and the traffic under a third. If there are but two Vice Presidents they will probably have supervision over operation and traffic, while the Treasurer and Comptroller will report directly to the President.

The subdivision of duties among departments as worked out by the New York Central, the Pennsylvania Railroad, and the Harriman lines will illustrate the existing practice of typical large organizations.

General Organization of the New York Central Lines

President.

Chairman of the Board of Directors.

Vice President—financial department.

Vice President—accounting department.

Vice President and General Manager—operating department.

Vice President—legal department, land and tax department.

Vice President—traffic department.

Secretary.

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In the New York Central organization there are five Vice Presidents, one of whom is in charge of legal affairs. The General Manager is one of the Vice Presidents, and he has supervision over both engineering and transportation. The chief officers in the mechanical department are the General Superintendent of motive power, rolling stock and machinery, and the General Mechanical Engineer. The finances and accounts are under different Vice Presidents.

General Organization of the Pennsylvania Railroad

President (general supervision and direction of all departments).

Legal department—General Counsel.

Secretary's department—Secretary.

First Vice President,

Purchasing, real estate, insurance, and pension departments.

Second Vice President,

Engineering department—Chief Engineer, Engineer of Bridges and Buildings, Engineer of Branch Lines.

Accounting department—Comptroller and Auditors.

Third Vice President,

Traffic department—Freight Traffic Manager, Passenger Traffic Manager.

Fourth Vice President,

Treasury department—Treasurer.

Employees saving fund—Superintendent.

Fifth Vice President,

Transportation department (Chief of Motive Power, General Manager).

General Superintendent of Transportation.

Chief Engineer of Maintenance of Way.

Superintendent of Telegraph.

Relief department—Superintendent.

The Pennsylvania Railroad Company, as well as the New York Central, has five Vice Presidents. The General Counsel

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is directly subordinate to the President, but is not a Vice President. The engineering and transportation departments are under separate heads. The Vice President in charge of transportation has control of motive power and of maintenance of way, but not of new construction. The engineering head of the Pennsylvania Railroad at the present time (1910) is the Second Vice President, to whom, in the distribution of duties, has also been assigned the supervision of the accounting department.

General Organization of "Harriman" Lines—Union Pacific, Oregon Short Line, Oregon Railroad and Navigation Company, and Southern Pacific

President (New York).

Vice President and Traffic Director (Chicago).

Vice President and Director of Maintenance and Operation (Chicago).

Vice President and Comptroller of Union Pacific and Oregon Short Line and Comptroller of Oregon Railroad and Navigation Company and Southern Pacific (New York).

Vice President and General Manager, Union Pacific (Omaha).

Vice President and General Manager, Oregon Short Line (Salt Lake City).

Vice President and General Manager, Oregon Railroad and Navigation Company (Portland, Ore.).

Vice President and General Manager, Southern Pacific (San Francisco).

Director of Purchases, all four lines (New York).

Treasurer, Union Pacific, Oregon Short Line, and Oregon Railroad and Navigation Company (New York).

Treasurer, Southern Pacific (New York).

The late Mr. E. H. Harriman gave proof of his executive genius in perfecting a unified and efficient organization for the management of the long and widely separated lines of which he secured possession. Each of the four railway

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systems included in the outline (which omits the minor railways and the large steamship lines over which the unified organization extends) has its own organization; but unity is secured by placing the supervision of traffic, of maintenance and operation, and of the accounts with three Vice Presidents, each having jurisdiction over all four lines. Similarly the purchasing departments of all four companies are under a common Director. Three of the four companies have the same Treasurer. The executive, financial, purchasing and accounting departments are managed from New York City; the traffic and the maintenance and operating departments are supervised from Chicago, but directly managed from the several home offices of the four companies — Omaha, Salt Lake City, Portland, and San Francisco. Fortunately, the death of Mr. Harriman has not caused this organization of his lines to disintegrate. The former Counsel of the roads has been made President of most of the Harriman companies, and the unified system will, presumably, remain intact.

Although the general outlines of railway organization are here presented in order to indicate the place occupied therein by the traffic department, it may be well to note in passing that there are two general types of railway organization, the divisional and the departmental. If the officials in the branches of service concerned with road maintenance, motive power and equipment, and train operation are all subordinate to the General Manager, and the several Division Superintendents have full authority and responsibility for the operation and maintenance of the respective divisions, the organization is divisional, and this is the type most followed by American railroads. When the powers of the Division Superintendent are restricted by giving the Chief Engineer of Construction, and the Engineer

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of Maintenance of Way and their subordinates authority to direct the Engineers and men engaged in new construction and the Roadmasters and forces employed in maintenance work within the divisions, the organization becomes departmental. In that case the duties of the General and Division Superintendents are confined practically to the operation of trains. The English roads generally prefer the departmental organization.

It will be noted that the New York Central has a strictly departmental organization. The Pennsylvania has the divisional type, but the company has found it necessary to relieve the General Manager and subordinates by placing the engineering department directly under a Vice President. The Harriman lines have the strictly divisional form of organization; under the Director of Maintenance and Operation there is for each company an officer who is both Vice President and General Manager with jurisdiction through the General and Division Superintendents over new construction, maintenance of way, over equipment, and the operation of trains.

The traffic and operating departments now rank on a par with each other. Formerly, the department in charge of roadway, equipment, and the operation of trains greatly overshadowed the one having supervision of traffic. Indeed, at the outset, few roads had a separate traffic organization; but with the growth in volume and variety of traffic, with the extension of services over a territorial area nearly as wide as the continent, and with the ever-increasing importance of developing and enforcing rate policies and systems that both harmonize with changing economic conditions and yield the company profitable revenues from its myriad services, the position of the traffic department in the general organization of the railway company has

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become as prominent as that of any other subdivision, even the financial or the operating.

The nature of the services performed by the traffic department causes it to be divided into the freight and passenger branches, each headed by a General Agent or, in the case of large companies, by a Traffic Manager. A diagram of the organization of the traffic department, as worked out by a typical large railway company, will both indicate the scope of its activities and reveal the administrative relations and rank of the several grades of traffic officers and employees.

General Traffic Organization of Pennsylvania Railroad Company, 1910

Third Vice President,

Passenger Traffic Manager.

General Passenger Agent.

Assistant General Passenger Agent (in charge of through traffic).

District Passenger Agents, and European Agents.

Assistant General Passenger Agent (in charge of local traffic).

Division Ticket Agents.

General Baggage Agent.

Assistant General Baggage Agent.

Freight Traffic Manager.

General Freight Agent—through traffic.

Assistant General Freight Agent.

General Freight Agent—local traffic.

Assistant General Freight Agent.

Division freight agents.

Foreign freight agent (Philadelphia).

Freight solicitors.

District freight solicitors.

Special agents.

European agent.

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Freight Claim Agent.

Assistant Freight Claim Agent.

General Coal Freight Agent.

Coal Freight Agent.

Manager, Empire Line (Philadelphia).

Western Superintendent of Empire Line (Chicago).

Agents and solicitors of Empire Line.

Manager of Union Line (Chicago).

Eastern Superintendent of Union Line (Philadelphia).

Western Superintendent of Union Line (Chicago).

Agents and solicitors of Union Line.

In the Pennsylvania traffic organization, there are five officers directly subordinate to the Traffic Vice President. The traffic of the Pennsylvania Railroad is so great that the Freight Traffic Manager is assisted by two General Freight Agents, one in charge of through traffic, the other with supervision over local business, also by a General Coal Freight Agent, aided by a Coal Freight Agent. The department headed by the Freight Claim Agent and his assistant is subordinate to the Freight Traffic Manager.

The duties of the Freight Traffic Manager of the Pennsylvania Railroad Company, as stated in the company's by-laws, are that he shall "under the direction of the Third Vice President have charge of the freight department," "make rates on freight traffic," "make the necessary arrangements in relation thereto with individuals and other railroad or transportation companies," "instruct the station agents and foreign agents in commercial matters pertaining to the receiving and forwarding of freight traffic," and "shall nominate to the Third Vice President all subordinate officers in his department." The General Freight Agents in charge of through and local traffic "shall, under the authority of the Freight Traffic Manager, name the rates for the transportation of such traffic,

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other than coal and coke," the latter being the duty of the General Coal Freight Agent.

The position of the Division Freight Agents in the Pennsylvania organization is important. They are under the direction of an Assistant General Freight Agent, and are "specially charged with the duty of procuring freight traffic for, and making local freight rates on, their respective divisions." They are required to spend "as much time as practicable on the line of their divisions, in order to familiarize themselves with the commercial and industrial interests thereon." They also seek to bring new industrial plants to the lines of their divisions. The Pennsylvania Railroad is operated in five general divisions, for which there were, in 1910, five Division Freight Agents. They are assisted in securing traffic by District Freight Solicitors, Freight Solicitors, and special agents who are the commercial travelers of the freight staff. A fuller statement of their services is made in Chapter XVI.

Two of the Pennsylvania Railroad Company's agencies for securing competitive traffic—the Empire Line and Union Line—are integral parts of its traffic organization. The Empire Line, which operates over the Pennsylvania Lines to Erie and by connecting lines westward and which solicits traffic to and from the West via Erie, is in charge of a manager whose duty it is to procure traffic and who has control over the agents of the line and over the arrangements made by the line with railway companies other than the Pennsylvania Railroad. The manager must, however, receive instructions from the Traffic Vice President in regard to commercial matters and as to the appointment of agents of the line. He must, also, confer "on all matters relating to the traffic of the line" with the Freight Traffic Manager and "be governed by him on all

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questions affecting rates." The General Manager must be consulted regarding the movement of traffic.

The Union Line is the traffic connection of the Pennsylvania Railroad with the Pennsylvania Lines west of Pittsburg. Through traffic between these two parts of the great system is shipped on Union Line billing, and the solicitation of freight westbound and eastbound between places east of Pittsburg and points in the West beyond the Pennsylvania Lines is the work of the Union Line solicitors.

The Manager of the Union Line is subordinated to the Traffic Vice Presidents and the Freight Traffic Managers of the Pennsylvania Company and the Pennsylvania Railroad Company. The Western Superintendent of the Union Line, whose office must be in Chicago, is required to give special "attention to the development of the competitive through traffic" of the Pennsylvania Railroad Company. He has "supervision of the agencies and business of the Union Line west of Pittsburg," while the Eastern Superintendent, located at Philadelphia, has similar authority east of Pittsburg. The Eastern Superintendent of the Union Line has very close relations with the freight department of the Pennsylvania Railroad. Duties may be assigned to him by the Freight Traffic Manager, "and in order to avoid the unnecessary duplication of these agencies, it shall be the duty of such soliciting agents, under the direction of the Eastern Superintendent, to secure traffic for the Pennsylvania Railroad system other than strictly Union Line traffic, where it can be done without injury to the interests of the Union Line."

This rather full description of the traffic department of one railroad company reveals the main features of the organization which other companies have given that branch

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of their service. For historical, personal, and local reasons every railway has individual variants from the traffic organization of other companies; but the differences are only of detail. The truth of this general statement may be illustrated by referring briefly to the freight traffic organization of the New York Central.

Freight Traffic Organization, New York Central and Hudson River Railroad

Traffic Vice President,

General Agent Traffic Department (New York).

Freight Traffic Manager.

Assistant Freight Traffic Manager.

Second Assistant Freight Traffic Manager.

General Freight Agent.

Assistant General Freight Agent.

Second Assistant General Freight Agent.

Division freight agents.

Commercial freight agents.

Traveling freight agents.

General Eastern Freight Agent (New York).

Special Agent (New York).

Chief of Tariff Bureau.

Industrial Agent.

General Canadian Freight Agent.

Coal Traffic Manager.

Special Agent, Coal Traffic Department.

Manager Fast Freight Lines.

The New York Central has a General Agent of the traffic department who reports directly to the Vice President and has jurisdiction both east and west of Buffalo over both the passenger and freight branches of the service. There is a General Freight Agent whose jurisdiction extends over the New York Central & Hudson River Railroad and West Shore Railroad; a General Freight Agent

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of the New York & Ottawa Railway and of the Rutland Railroad, and an Assistant Freight Traffic Manager of the Boston & Albany Railroad located at Boston. There is a General Freight Agent on each one of the lines west of Buffalo, each officer reporting directly to the Freight Traffic Manager either of the lines east or west of Buffalo. There is a Coal Traffic Manager of the lines east of Buffalo and another of the lines west of Buffalo.

The prominent place given the fast freight lines in the traffic organization of the Pennsylvania, New York Central, and other railways is a noteworthy fact. As will be explained at greater length in Chapter XIII, on "Fast Freight Lines," the Pennsylvania has only "company" lines—those owned and controlled by the company; while the New York Central has both "independent" and "company" lines; but the Merchants Despatch, although having a corporate existence distinct from the New York Central, is controlled by the railway company, and thus its independence is nominal rather than real. The fast freight lines, although now for the most part incorporated within the traffic organization of the large railways, are efficient agencies for the solicitation of through and competitive traffic.

Another method of expediting traffic, particularly long-distance freight, has been adopted during recent years by the freight operating departments. It consists of shipping certain commodities and classes of goods as "time" or "preference" freight, giving them preference over other shipments, and making special arrangements for their rapid movement when in transit. This phase of the organization of the freight service is so important as to require description in a separate chapter (XIV).

The development of traffic may be intrusted entirely

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to the General and Division Freight Agents, the Freight Solicitors, and the Managers and Agents of the fast freight lines, as is the case with the Pennsylvania and New York Central, or the work of these agencies may be supplemented by a special organization charged with the duty of increasing the productivity of existing industries served by the railway company, and with the task of bringing about the establishment of new industries along its lines. Among the traffic officers of the Rock Island, for instance, there is an Industrial Commissioner, an Agricultural and Horticultural Commissioner, and a General Dairy Agent; and in addition there is, separate from the traffic organization, a Mining Department, headed by a Manager. The Industrial or other Commissioner whose function it is to promote tonnage and traffic may thus either be or not be one of the traffic officials. The Missouri Pacific, for example, has a separate industrial department in charge of an Industrial Commissioner. The same is true of the Erie Railroad and the Southern Railway; on the other hand, the Baltimore & Ohio has an Industrial Agent within its freight department. American railway practice affords numerous instances of all three plans of traffic promotion—by the Freight Agents solely, by an industrial department within the freight organization, and by a distinct industrial department.

The freight traffic department is the one which represents the railway company in its dealings with its patrons, the shippers and consignees, from whom the larger part of its revenues is obtained. The department must make thousands of rates in which tens of thousands of persons have a vital interest. Upon the rates charged by the railways and the services they perform depend the success and prosperity or failure and adversity of myriad business

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enterprises. It is thus incumbent upon every railway company to develop an efficient, smooth-working traffic organization and to man it with officials of executive ability, business judgment, and personal tact. Nowhere else in the railway organization is the personal equation of greater consequence.

This is as true of the negotiations which the higher traffic officials have with chambers of commerce and other public bodies as of the dealings with individual shippers and consignees. As railway companies become larger and the field of their operations more extensive, and as business undertakings depend less upon local conditions and more upon the relations of section with section, and city with city, the individual business man finds it advantageous and often necessary to negotiate with the railways through some strong commercial body which can speak not only for him but also for others engaged in the same or like kinds of business, and which can voice the needs of the city or community in which he and others have business interests at stake. The Traffic Vice President, Traffic Manager, and General Agent must be able to deal with representatives of public bodies in such a way as to satisfy the reasonable demands of the public, to convince business organizations of the un wisdom of unreasonable or impracticable requests, and generally to establish and maintain harmonious relations between the railway company and the men and communities it serves. To enforce charges that are profitable to the company, to give the public rates and services that are reasonable and fair, and to do this in such a way as to minimize friction—these are the difficult tasks of the traffic officials. They constitute, or ought to constitute, the diplomatic branch of the railway service.

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It is, however, not to be expected that there will be no differences to be adjusted by government commissions or in the courts, especially in view of the fact that government supervision and regulation by local, state and national authorities is constantly being made more detailed and thorough. The limitations which city ordinances, state and federal laws, and commission orders and decrees may justly and constitutionally place upon the acts of the traffic officials of quasi-public corporations must be progressively determined by the decision of concrete questions in commission and court procedure. For this reason, the traffic officers must have the constant counsel and assistance of the company's legal department. Cases must be tried, and when they come to trial, they must be prosecuted or defended for the company by its counsel and attorneys; but the chief aid which the legal advisers can give the traffic department is to keep it within the law and without the courts. Litigation and adjudication are less to be desired than adjustment out of court.

The attainment of this ideal is coming, year by year, to be more definitely sought in the organization and management of the traffic and legal departments. Much friction between the railways and the public in the past has been the result of a difference of opinion as to the legal nature of the railway corporation and its services. As long as the officials of the company regarded the railroad business as being an essentially private one, while their patrons considered transportation to be a service of a public nature, and facilities were to be provided on demand by a railroad irrespective of its permanency or of the effect of location or other railroad operations, harmony and mutual understanding were impossible. Fortunately, there is now no disagreement as to the public character of the

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railway services, and the reasonable grounds that must underlie demands for facilities and service; the principle is clearly established by court decisions and is accepted in practice by the carriers. The railway official, whether he be Counsel or Traffic Manager, may no longer, nor does he, consider himself merely as the officer of a private business corporation. He realizes that he holds a dual position, as the servant of a corporation and as the Manager of a public service that is lawfully and of necessity carefully regulated by the government, and appreciates more than before that as revenues are derived solely from the public, the better the transportation service the more substantial is the basis for larger gross earnings.

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2. "The By-laws and Organization for Conducting the Business of the Pennsylvania Railroad Company," 1910.
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CHAPTER V

TERMINAL FREIGHT SERVICES AND FACILITIES

Interest of traffic and operating departments in terminal services—
Great importance of terminal problems—Pennsylvania's terminal
project at Greater New York—Map of New York terminal—
The terminal situation in Chicago—Measures required to be
carried out at Chicago—Terminal difficulties at Pittsburg—
Freight handling at freight yards—At the inbound and out-
bound freight houses and the team tracks—Industry tracks—
Water-front terminals—References.

Two departments of the railway organization, the traffic and the operating, have special interest in terminal freight services and facilities. While the movement of trains and the handling of freight, both on the line and at the terminals, is the work of the "transportation" branch of the operating department, the Traffic Manager and his subordinates are vitally concerned with terminal services. Under present conditions, the efficiency and economy of freight transportation, the satisfaction or discontent of shippers and consignees, and, indeed, the scale of rates that must be charged are more largely determined by terminal facilities and operations than by any other factors.

It is the traffic officers who must decide what the rates shall be, and who must, if possible, cause those who ship and receive freight to feel that they are being served with maximum promptness and minimum trouble and expense. It is the operating department that moves the freight, but

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it is the traffic branch that secures traffic, holds it against competitors, causes it to increase steadily, and fixes rates which both make this possible and also provide the company with adequate revenue. As has been well stated by Mr. Nelson W. Pierce, the local Freight Agent at Chicago of the St. Paul Railway, "The question of handling freight economically must be looked at from two different points of view, the operating and traffic. . . . From a business standpoint, it is not always a question of how cheaply a freight house may be run, but how well; always keeping an eye on the expense, making every dollar count, while, at the same time, giving the shipping public the best possible service, with the least possible detention to teams. Such a policy is bound to bring the business your way, as against your competitor who has reduced his cost per ton where he cannot take care of his business promptly and satisfactorily." Thus both the General Manager and the Traffic Manager have problems connected with terminal operations that must be handled by cooperation.

This being a volume on freight traffic and rates, it is concerned chiefly, but not entirely, with the activities of the traffic department. The chief purpose of the book is to give an intelligent account of the transportation services and the charges therefor; the passenger and shipper as well as the carrier are kept in view in the discussion; and, in considering the services performed by the railways, it is necessary, to some extent, to go beyond the traffic department and to include some of the work of the "transportation" branch. This is especially true of this and of several other chapters in this section (Part II) of the book. The discussion of railway operations will, however, go no farther than is necessary to a clear account of the freight and passenger traffic services. This is not intended to be

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a book on the work of the operating department, although it has something to say of several operating activities.

This is merely another way of stating that traffic cannot be entirely dissociated from "conducting transportation," that the two branches of the organization work together to accomplish a common result—economical and efficient services at just and profitable rates. In the facilities for, and the services of, handling freight into and out of terminals, especially those in large cities where there are great difficulties to be overcome in bringing the stations and cars near to shippers and consignees, the close connection of the activities of the operating and traffic departments is particularly noticeable.

The location of stations within city terminals, the enlargement or alteration of facilities for handling domestic or foreign trade, the opening of connections by belt line or otherwise with other railways, the extension or contraction of arrangements for the interchange of traffic with connecting rail or water lines, what ferries are needed, whether the railway company had better operate barge lines, and whether it would be well for the company to run a coastwise or oversea steamship line from this or from some other port, these and many other terminal questions are largely traffic problems. Upon the prevision or shortsightedness manifested in their solution by the combined wisdom of the traffic, engineering, and operating departments, will depend the progress of the company. It is not too much to say that the most successful railways of the future will be those that show the greatest competency in dealing with the terminal requirements of the chief traffic centers, inland and seaboard.

The discussion in this chapter may properly be limited to the city terminal. The line stations ordinarily present

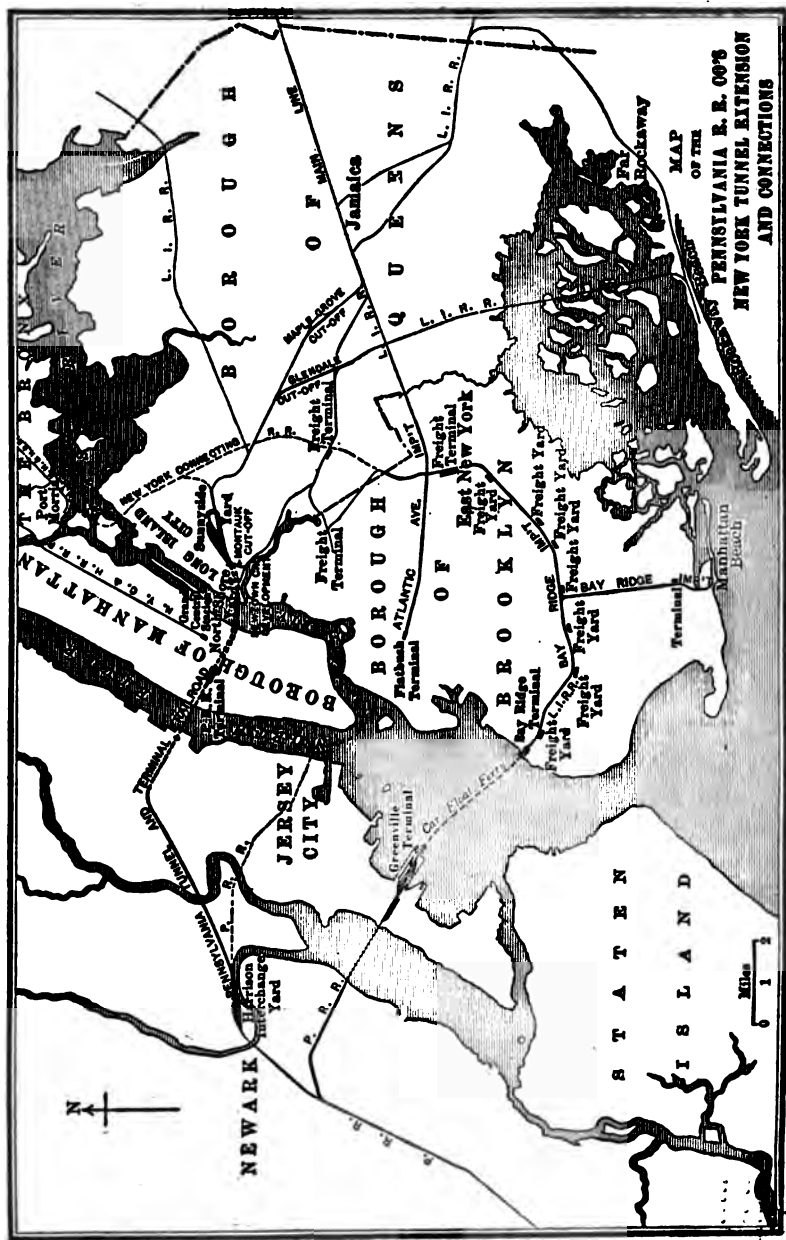
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no special difficulties from either the operating or the traffic viewpoint, while, on the contrary, the obstacles in the way of adequate terminal development in the large interior and seaport cities are most serious. This fact is illustrated by the great outlays now being made or now under consideration for terminals by the leading railways, not only in the United States, but also in many foreign countries. The rapid growth of cities and the accompanying increase in passenger and freight terminal operations are quite as characteristic of the industrially progressive countries of western Europe, for instance, as of the United States and Canada.

What the New York Central and the Pennsylvania are now doing to improve their passenger facilities in Greater New York has attracted wide attention, but the public is less generally aware of the fact that it was not only the need of developing the passenger services, but also the necessity for providing accommodations for handling the enormous freight traffic converging upon, and originating within, that great center of trade and industry, that caused these two railway companies courageously to undertake the execution of the bold and expensive terminal projects at and about New York City.

A somewhat full statement of the work being done by the Pennsylvania Railroad in and around New York City to create better and greater facilities for handling passengers and freight may well be given in this connection, because the terminal problems being solved in a large way by the Pennsylvania at New York illustrate many of the terminal questions confronting railways in other cities of lesser size.

The accompanying map indicates the physical conditions met with in providing Manhattan and other parts of



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Greater New York and its environs with coördinated railway terminals and shows the location of the lines, ferries, tunnels, yards, freight and passenger stations used or to be employed by the Pennsylvania Railroad in that traffic center. The general plan which the Pennsylvania has worked out for handling freight and passenger traffic into, out of, and through New York is succinctly stated¹ by Brigadier-General Charles W. Raymond, who was chairman of the Board of Engineers of the Pennsylvania Tunnel and Terminal Railroad, to include the following ten parts:

1. The Pennsylvania Tunnel and Terminal Railroad. This line begins near Newark, N. J., crosses the Hackensack meadows, and passes through Bergen Hill, under the North River, the borough of Manhattan, and the East River to the large terminal yard, known as Sunnyside Yard, in Long Island City.

2. The electrification of the Long Island Railroad within the city limits.

3. The Pennsylvania freight terminal yard and piers at Greenville, N. J., connecting by ferry with the Bay Ridge terminal of the Long Island.

4. The Bay Ridge improvement of the Long Island, from East New York to Bay Ridge.

5. Yards for increasing the freight facilities in the boroughs of Brooklyn and Queens.

6. The Atlantic Avenue improvement in Brooklyn, involving the removal of the steam railway surface tracks and the extensive improvement of the passenger and freight station at Flatbush Avenue.

7. The New York Connecting Railroad, extending through a part of the borough of Queens and crossing the East River by a bridge at Ward's and Randall's islands to Port Morris, N. Y.

¹"Proceedings American Society of Civil Engineers," vol. xxxv., p. 859, September, 1909. The paper is reproduced in the *Railroad Age Gazette*, vol. xlvii., pp. 759-764, October 22, 1909.

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8. The Glendale cut-off of the Long Island.
9. New piers and docks in Newtown Creek at its confluence with the East River.
10. Electrification of the United Railroads of New Jersey Division from Newark to Jersey City.

The facilities the Pennsylvania is working out for handling the rapidly expanding traffic of Long Island and for making that part of Greater New York an even larger center of industry and trade by giving Long Island immediate and ready connections, not only with Manhattan but also with both the Pennsylvania's lines to the West and the New Haven's lines to Boston and New England, show how comprehensive and far-reaching must be the plans for a great railway terminal.

The Tunnel and Terminal Railroad is to be used for passenger traffic, but can, if desired, be employed for freight at night. It connects the Harrison-Manhattan Transfer near Newark with the Sunnyside Yard in Long Island City. These yards are primarily for passenger cars. Freight to and from Long Island and New England will use the Greenville and Bay Ridge terminals, but that from the West for Jersey City and Manhattan will pass through the Harrison-Manhattan yard over the old line to the Jersey City terminal; while at the large Sunnyside yard will be handled the local freight to and from the Long Island Railroad and the New York Connecting Railroad. Through freight between points east and west of Greater New York, and a large part of that to and from Brooklyn, will be handled by ferry between the large water terminals at Greenville and Bay Ridge, and will thus avoid the congestion of the Jersey City and East River terminals and of the busiest portions of New York harbor.

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The New York Connecting Railroad joining the western end of Long Island with New England by way of bridges over the East River will greatly facilitate the handling of both freight and passenger traffic between New England and points west and south of New York City. The improvement of the Flatbush passenger terminal in Brooklyn and of the approach to it on Atlantic Avenue, permits the passenger traffic of Brooklyn and that between Brooklyn and lower Manhattan to expand; while the freight shipments into and out of the Brooklyn and Queens district will be facilitated by the numerous enlargements of old yards and by eleven new yards with a combined area of eighty-nine acres. The most important of these new yards are the Bay Ridge terminal, thirty-three acres in area, and the freight terminal at East New York, which comprises twenty-three acres, is 200 feet wide and a mile long, the tracks being depressed and crossed by six viaducts carrying city streets. Grade crossings are eliminated within the terminal area; the service between the Harrison and Sunnyside yards will be electric, while lines of the Long Island Railroad have already been electrified. The freight traffic by way of Greenville and Bay Ridge and also that over the New York Connecting Railroad will, naturally, be handled by steam locomotives.

The Pennsylvania is investing as much in the extension of the terminal facilities of Greater New York as would be required to build a standard double-track railroad halfway across the continent. General Raymond, in 1909, estimated that the cost of the Pennsylvania improvements in the New York district when fully completed will be \$159,000,000, the distribution of the total expenses being as follows:

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New York tunnel extension and station, including interchange yards at Harrison, N. Y., and Sunnyside, L. I., P. T. & T. R. R. Co.....	\$100,000,000
Long Island Railroad electrification; Bay Ridge and Atlantic Avenue improvements; Glendale cut-off; freight yards, and new equipment.....	35,000,000
New York Connecting Railroad, to be built jointly by the Pennsylvania and the New York, New Haven & Hartford.....	14,000,000
Pennsylvania Railroad improvements in New Jersey; electrification of line from Jersey City to Park Place, Newark; Greenville freight line and terminal on New York Bay.....	10,000,000
Total.....	<u>\$159,000,000</u>

The magnitude and great expense of the Pennsylvania's terminal improvements at New York forcibly illustrate the difficulties which confront the railroads in consequence of the rapid growth of cities and the more than proportionate increase in traffic. The terminal situation at Chicago, while very different physically from that at New York, presents serious problems. In the first place, Chicago is served by an exceptionally large number of railways—twenty-three—each being obliged to penetrate to the center of the great urban district, and to provide passenger stations and freight yards at numerous points along its tracks within the intra-urban area. Mr. F. A. Delano, President of the Wabash Railroad, in a recent address¹ said, in speaking of Chicago: "Six passenger stations are handling the twenty-three separate trunk lines (four of which have more than one line into the city), but when it comes to freight depots, each of these twenty-three lines has at least one downtown depot for receiving and forwarding of freight, with from three to ten subsidiary stations

¹ From a paper read before the American Institute of Architects at Washington, D. C., December 16, 1909, and printed in the *Railroad Age Gazette*, December 24, 1909, vol. xiv, pp. 1234-1237.

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farther from the heart of the city to supplement the main station."

This, however, has not adequately met the terminal needs at Chicago. The numerous separate lines are very imperfectly coördinated, shippers are compelled to truck their freight long distances, and to send their wagons more or less completely loaded to several depots, a truck load often being subdivided according to the number of roads over which the goods are to be shipped. Moreover, many of the road crossings, especially in the central portions of the city, are at grade, although 113 miles of line had been elevated before 1910. As yet, no start has been made with the substitution of electric power in place of the smoke-producing steam locomotives.

The railways centering at Chicago must, if possible, accomplish three expensive tasks in order to meet adequately the terminal needs of that city.

(1) Some scheme must, if possible, be devised for reducing, by efficient freight tunnels or otherwise, the amount of trucking in the downtown, congested portion of the city, and of shortening the distance goods are hauled in all parts of the widespread city. This is necessary to efficiency and economy of service.

(2) The work of eliminating grade crossings must be carried on to completion; this is made imperative by the duty of the railroads and the city to protect the people against the dangers of such crossings; but, if public safety did not require this to be done, it would still be, or soon become, a requisite part of the terminal improvements by which alone the prompt and inexpensive handling of freight into, and out of, and throughout the great urban district can be accomplished.

(3) All the railway lines within the city must in time be

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electrified. It is inevitable that the people of Chicago will do their utmost to compel manufacturers and carriers to minimize the intolerable smoke nuisance from which the city now suffers.

It must, of course, be recognized that the electrification of the Chicago railway terminals, and the further elimination of grade crossings, will be very expensive, and that the work will have to be carried out gradually. It is probable, however, that these two classes of improvements will be found ultimately to be to the advantage of the railroads as well as a benefit to the public, not only in Chicago, but in all large cities. The relative economy under present conditions of mechanical efficiency of steam and electric power for terminal services is not yet fully determined. The experience of the New York Central and the Pennsylvania in and about Greater New York will throw much light upon this question; but, even though electricity should not be found cheaper than steam locomotives for terminal operation, the advantages, other than economy, possessed by electricity may be expected to lead to its general use within city limits.

Every large city has its own peculiar terminal problems. The facilities for handling freight at each important city must be developed with reference to the city's special needs and possibilities. New York, a great seaport, occupying an area dissected by navigable waters into numerous disconnected urban districts, has the most complicated terminal problem of any American city; but the physical conditions within a radius of twenty miles from lower Manhattan as regards area and depth of water and extent and accessibility of easily occupied lands, are such as to permit an almost indefinite expansion of commerce and industry. All that needs to be done to insure this develop-

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ment is to continue the work of terminal unification now being carried out by the railway companies.

In Pittsburg the physical obstacles to trade and traffic expansion are especially great, and the marvelous growth of the city, in spite of these terminal difficulties, affords the strongest proof of the unsurpassed industrial resources of its surrounding district. Located on the point of a hilly peninsula formed by the deeply intrenched Monongahela and Allegheny rivers whose confluent waters create the Ohio, Greater Pittsburg has been made possible only by the expansion of the urban area over the rugged hills of this peninsula and up and down the narrow valleys. The railroads necessarily enter the city by these valleys; or, as in the case of the Wabash, approach transversely to the rivers by means of tunnels that are expensive to construct and that necessarily limit traffic expansion. Having attained the central portion of Pittsburg, the railways find the creation of adequate passenger and freight facilities most difficult and costly; and, to make the terminal problem further complicated, Pittsburg is not only the center of an enormous tonnage, but is the gateway through which moves a large share of the great volume of traffic carried east and west between the Mississippi Valley and the Atlantic seaboard states.

It was natural that freight congestion which began about 1900 was manifest first and most acutely in Pittsburg. The Pennsylvania Railroad management promptly realized the necessity of constructing a railroad around the city so as to keep as much freight as possible out of the congested area, and of expanding the stations and yards within and about the city as rapidly as practicable.

A city like Indianapolis presents terminal conditions the opposite of those at Pittsburg. Situated in a level

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country with nothing to interfere with its concentric expansion, Indianapolis is the focus and crossing point of numerous converging railways which are readily connected with each other and with the chief industrial plants by a belt line encircling the city.

The freight terminal facilities in every city, however divergent the general problems of supplying these facilities may be, must include certain essential parts. There must be yards, stations, team tracks, industry tracks or sidings, and, in the case of sea, river, or lake ports, water terminals.

The traffic-center of the railway terminal is the freight yard into and from which both inbound and outbound cars move in a steady stream. The main freight yard or yards must be located well outside of the center of the city, and must ordinarily consist of two parts. In one part, the trains from the main line are received and broken up, the cars being classified with reference to the several stations within the terminal, or with reference to the places to which the cars are en route, if the trains arriving at the yard contain cars with through freight for points beyond the terminal adjacent to the yard. From the yard or yards for receiving and classifying freight the cars are distributed among the local freight stations of which a railroad serving a large city may have a large number. The Pennsylvania Railroad has fifty-one in Philadelphia.

Freight arrives at the receiving yard in both car load and less than car load shipments, in "straight" cars with goods billed to a single station and in "mixed" cars containing commodities for delivery at several stations; moreover, the less-than-car-load shipments for any station may reach the yard from various points and in numerous cars. Thus there must be transfer houses adjoining the yard for such reloading of freight as may be required in order to

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assemble in the same car or cars all the several shipments billed to any one station.

Freight outbound from a large terminal arrives at the yard in car load and part car load lots from each of the stations at which goods are received from shippers. The fully loaded cars are at once made up into trains with reference to the company's several lines leading out of the yard. The "mixed" cars arriving at the yard with less than car load shipments of outbound freight are so reloaded at the transfer house as to bring together the freight billed to any given point.

The freight stations—the points within the terminal where shippers deliver, and consignees receive, commodities—may be large or small; and, if large, they will include inbound and outbound freight houses, team tracks, transfer platforms or sheds, warehouses, and possibly grain elevators, and stock pens.

Cars arriving at the inbound freight house are unloaded directly into the house from the tracks—usually two—along the side. The house is usually sixty or seventy feet wide and on the side opposite the railway tracks there is a driveway for the teams and drays used by the consignees hauling away their freight. Car load as well as less than car load freight may be unloaded into the inbound house; but the full cars loaded with commodities that can readily be unloaded directly from the cars onto the wagons, are placed upon the "team tracks," which are merely yard tracks between or along which there are paved driveways. Cars may also be placed upon "team tracks" for loading some kinds of freight. In an important station where much bulky freight is handled, there will be a relatively large space given to "team tracks." These tracks are near, but not alongside, the freight house.

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Freight is delivered to the outbound house from wagons along one side. As it is unloaded, it is weighed, and the shipping ticket brought by the drayman is checked up to ascertain whether the packages and their markings have been correctly listed; the weights are added to the shipping list; the packages are so marked as to indicate the car in which they are to be placed, and are then turned over to the truckers. The shipping tickets are in duplicate; one copy is receipted and handed back to the driver while the other copy goes to the billing clerk for use in making out the bill of lading.

The outbound house is usually narrow, thirty to fifty feet wide; and there are often as many as eight tracks placed close together alongside the house. The cars to be loaded are placed on these parallel tracks with doors opposite so that movable platforms may be laid from one car floor to another and packages may be trucked through as many cars as may be placed between the freight house and the cars upon the track most remote from the house. The length of the outbound freight house, and the number of tracks paralleling it, will depend upon the volume of business to be handled and the distances packages can be trucked without undue labor costs.

The inbound and outbound freight houses may be located some distance from each other; but when space conditions permit, they are advantageously placed opposite and parallel and connected at one end by the offices required for the station force. The best location for the transfer platform is, naturally, between the inbound and outbound-house tracks. Ordinarily the transfer of freight from car to car is best performed at transfer houses adjacent to the freight yard and not at the terminal freight station; but in some cities it is found necessary to combine

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both station and transfer services in some of the large stations.

The greatness of every city is the result of its industrial activities. The fuels and material required by the mills and factories, and the manufactured products which they create, comprise the larger share of the tonnage of traffic handled by the railroads in all large cities. As far as practicable, every plant is connected with a railway by one or more spur tracks over which cars may be switched into and out of the establishment. These industry tracks enable large manufacturers to load and unload, within their own premises, most of the goods they ship and receive, and thus they make relatively little use of the railway company's freight stations. Small manufacturers, practically all persons and companies engaged in the mercantile trade, and the great army of irregular shippers are those who make most demand upon the services of freight stations.

Facilities for the transfer of traffic from railway to water craft, or from boat to car at seaboard, lake front, or river bank, form an important part of the terminal arrangements that must be provided in many cities. With the growing volume of water-borne commerce, the increasing depth of channels and harbors, and the constantly enlarging size of ships, the importance and the expense of water terminals become greater. The present-day ocean or lake freighter requires a spacious dock, and its traffic a large pier. Moreover, it has become necessary to provide many kinds of piers, covered ones for general merchandise, others specially equipped for handling fruit or other perishable commodities, coal piers, ore piers, grain elevators, etc. Not all of these are everywhere supplied by the railroads—although, in the United States, most of them are—but, how-

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ever provided, they constitute an integral part of the railway terminal.

Water terminal facilities in different cities vary with physical conditions and traffic requirements. In New York, broad and lengthy piers extend into river and bay, while at New Orleans, open and covered wharves, paralleling the stream, occupy the river bank. At Oakland, Cal., the railway lines must be extended upon causeways well into the bay in order to place the water terminals where there is sufficient depth of water to accommodate shipping, while at the Puget Sound ports ships may anchor or dock at the very shore line in ample depth of water.

The manner in which these dissimilar harbor fronts must be equipped for commerce depends upon the nature of the traffic to be handled. At Galveston, where the major share of the commerce is outbound and consists of grain and cotton, elevators for handling the grain and warehouses for the cotton will naturally comprise a large part of the water terminal facilities. At Pensacola, export lumber is the chief traffic and requires few terminal structures; from Tampa, phosphate rock is a large item of export; from Norfolk and Newport News, grain and coal; from Philadelphia, coal, petroleum, grain, and general commodities; while through New York outbound and inbound traffic of nearly every kind moves in large volume. The facilities at all these ports correspond to traffic needs. The problem of the railways is to determine what water terminals will be most serviceable, and to decide where they had best be located with reference both to the harbor and to company's lines and land terminals. Every railway will endeavor to coördinate and unify all its freight facilities—its yards, freight stations, and water terminals—at every important traffic center. The enormity of this task at a

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place like Greater New York has been indicated in the preceding pages.

The foregoing discussion of terminal freight services and facilities, while necessarily concerned mainly with general problems rather than with details of operation, indicates clearly that great emphasis is being laid upon terminal development, and that in many cities heavy investments of capital are being made to increase facilities and to lessen the costs at terminals. It is realized by all railway managers that the terminals and yards rather than the line fix the limit of possible traffic expansion. What is now being done to enlarge or reconstruct terminals at the main traffic centers is more probably the beginning and not the end of what is to be accomplished.

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CHAPTER VI

FREIGHT SHIPPING PAPERS

Shipping bill and receipt for freight—Bills of lading—straight, order, special, export, grain, and government—Releases and guarantees—Waybills—local, interline, card, perishable goods, livestock, milk, and company freight—Freight bill and notice of arrival—Over, short, and bad-order reports—Tracers—Claim blanks—References.

IN connection with the handling of freight several shipping papers are necessary. Those ordinarily used in the actual movement of freight will be described in this chapter; those of a purely accounting nature, and the special papers used in the shipment of time or preference freight, in the keeping of car records, and in the computation of per diem, mileage charges, and demurrage, are elsewhere considered.

SHIPPING BILL AND RECEIPT FOR FREIGHT

Some railway companies require shippers upon delivery of their freight to present a "shipping bill" stating the name of the shipper and consignee, destination, and description of the articles. After having checked up the shipping bill with the freight itself, the local agent issues a *receipt for freight* or *shipper's receipt*. One, and sometimes two, copies are given to the shipper, and one is retained by the agent. Firms shipping freight often prefer to furnish their own receipts for the agent to sign, and

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in that way avoid the need for a separate shipping bill. When no shipping bill is presented, the receipt is issued after examination of the goods and the marks upon them. Many railroads have wholly dispensed with the "receipt," the bill of lading serving therefor. The two papers are identical except that the shipper's receipt is not negotiable and usually does not contain the rate of charge.

BILLS OF LADING

The shipper's receipt, wherever issued, may, upon request of the shipper, be exchanged for a bill of lading. This is issued in triplicate form, the original and one copy being given to the shipper, the other being retained by the Freight Agent. Large firms sometimes keep blank bills of lading which they may either themselves print or which they may obtain from the railway. They fill out the bills and take them to the local agent for his signature, and often obtain more than two copies from the agent. The form of all bills of lading must be exactly the same whether furnished by shippers or by the railway.

Bills of lading may be either "straight" or "order." A *straight bill of lading* (Form 1) is not negotiable and in it the freight is billed direct to the consignee. It contains a statement of the number of packages shipped, description of the articles, their weight, rate, or class and rate, charges due and advances paid, name of shipper and consignee, shipping point, destination, route, car number and initials, and signature of the agent and shipper. It, moreover, contains an agreement that the articles are accepted and shipped subject to certain stipulated conditions. The contract contained in the uniform bill of lading which was approved by the Interstate Commerce Commission and widely adopted in 1908, contains ten sections, the leading

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CONDITIONS.

Sec. 1. The carrier or party in possession of any of the property herein described shall be liable for any loss thereof or damage thereto, except as hereinafter provided.

No carrier or party in possession of any of the property herein described shall be liable for any loss thereof or damage thereto or delay caused by the act of God, the public enemy, quarantine, the authority of law, or the act or default of the shipper or owner, or for differences in the weights of grain, seed, or other commodities caused by natural shrinkage or discrepancies in elevator weights. For loss, damage, or delay caused by fire occurring after forty-eight hours (exclusive of legal holidays) after notice of the arrival of the property at destination or at port of export (if intended for export) has been duly sent or given, the carrier's liability shall be that of warehouseman only. Except in case of negligence of the carrier or party in possession (and the burden to prove freedom from such negligence shall be on the carrier or party in possession), the carrier or party in possession shall not be liable for loss, damage, or delay occurring while the property is stopped and held in transit upon request of the shipper, owner, or party entitled to make such request; or resulting from a defect or vice in the property or from riots and strikes. When in accordance with general custom, on account of the nature of the property, or when at the request of the shipper, the property is transported in open cars, the carrier or party in possession (except in case of loss or damage by fire, in which case the liability shall be the same as though the property had been carried in closed cars) shall be liable only for negligence, and the burden to prove freedom from such negligence shall be on the carrier or party in possession.

Sec. 2. In issuing this bill of lading this company agrees to transport only over its own line, and except as otherwise provided by law acts only as agent with respect to the portion of the route beyond its own line.

No carrier shall be liable for loss, damage, or injury not occurring on its own road or its portion of the through route, nor after said property has been delivered to the next carrier, except as such liability is or may be imposed by law, but nothing contained in this bill of lading shall be deemed to exempt the initial carrier from any such liability as imposed.

Sec. 3. No carrier is bound to transport said property by any particular train or vessel, or in time for any particular market or otherwise than with reasonable dispatch, unless by specific agreement indorsed hereon. Every carrier shall have the right in case of physical necessity to forward said property by any railroad or route between the point of shipment and the point of destination; but if such diversion shall be from a rail to a water route the liability of the carrier shall be the same as though the entire carriage were by rail.

The amount of any loss or damage for which any carrier is liable shall be computed on the basis of the value of the property (being the bona-fide invoice price, if any, to the consignee, including the freight charges, if prepaid) at the place and time of shipment under this bill of lading, unless a lower value has been represented in writing by the shipper or has been agreed upon or is determined by the classification or tariffs upon which the rate is based, in any of which events such lower value shall be the maximum amount to govern such computation, whether or not such loss or damage occurs from negligence.

Claims for loss, damage, or delay must be made in writing to the carrier at the point of delivery or at the point of origin within four months after delivery of the property, or, in case of failure to make delivery, then within four months after a reasonable time for delivery has elapsed. Unless claims are so made the carrier shall not be liable.

Any carrier or party liable on account of loss of or damage to any of said property shall have the full benefit of any insurance that may have been effected upon or on account of said property, so far as this shall not avoid the policies or contracts of insurance.

Sec. 4. All property shall be subject to necessary coopers and baling at owner's cost. Each carrier over whose route cotton is to be transported hereunder shall have the privilege, at its own cost and risk, of compressing the same for greater convenience in handling or forwarding, and shall not be held responsible for deviation or unavoidable delays in procuring such compression. Grain, in bulk, con-

signed to a point where there is a railroad, public or licensed elevator, may (unless otherwise expressly noted herein, and then if it is not promptly unloaded) be there delivered and placed with other grain of the same kind and grade without respect to ownership, and if so delivered shall be subject a lien for elevator charges in addition to all other charges hereunder.

Sec. 5. Property not removed by the party entitled to receive it within forty-eight hours (exclusive of legal holidays) after notice of its arrival has been duly sent or given may be kept in car, depot, or place of delivery of the carrier, or warehouse, subject to a reasonable charge for storage and to carrier's responsibility as warehouseman only, or may be at the option of the carrier, removed to and stored in a public or licensed warehouse at the cost of the owner and there held at the owner's risk and without liability on the part of the carrier, and subject to a lien for all freight and other lawful charges, including a reasonable charge for storage.

The carrier may make a reasonable charge for the detention of any vessel, or car, or for the use of tracks after the car has been held forty-eight hours (exclusive of legal holidays), for loading or unloading, and may add such charge to all other charges hereunder and hold such property subject to a lien therefor. Nothing in this section shall be construed as lessening the time allowed by law or as setting aside any local rule affecting car service or storage.

Property destined to or taken from a station, wharf, or landing at which there is no regularly appointed agent shall be entirely at risk of owner after unloading from cars or vessels or until loaded into cars or vessels, and when received from or delivered on private or other sidings, wharves or landings, shall be at owner's risk until the cars are attached to and after they are detached from trains.

Sec. 6. No carrier will carry or be liable in any way for any documents, specie, or for any articles of extraordinary value not specifically rated in the published classification or tariffs, unless a special agreement to do so and a stipulated value of the articles are indorsed hereon.

Sec. 7. Every party, whether principal or agent, shipping explosive or dangerous goods, without previous full written disclosure to the carrier of their nature, shall be liable for all loss or damage caused thereby, and such goods may be warehoused at owner's risk and expense or destroyed without compensation.

Sec. 8. The owner or consignee shall pay the freight and all other lawful charges accruing on said property, and, if required, shall pay the same before delivery. If, upon inspection it is ascertained that the articles shipped are not those described in this bill of lading, the freight charges must be paid upon the articles actually shipped.

Sec. 9. Except in case of diversion from rail to water route, which is provided for in Section 3 hereof, if all or any part of said property is carried by water over any part of said route, such water carriage shall be performed subject to the liabilities, limitations, and exemptions provided by statute and to the conditions contained in this bill of lading not inconsistent with such statutes or this section, and subject also to the condition that no carrier or party in possession shall be liable for any loss or damage resulting from the perils of the lakes, sea, or other waters; or from explosion, bursting of boilers, breakage of shafts or any latent defect in hull, machinery, or appurtenances; or from collision, stranding, or other accidents of navigation, or from prolongation of the voyage. And any vessel carrying any or all of the property herein described shall have the liberty to call at intermediate ports, to tow and be towed, and assist vessels in distress, and to deviate for the purpose of saving life or property.

The term "water carriage" in this section shall not be construed as including lightering across rivers or in lake or other harbors, and the liability for such lightering shall be governed by the other sections of this instrument.

Sec. 10. Any alteration, addition or erasure in this bill of lading which shall be made without an endorsement thereof hereon, signed by the agent of the carrier issuing this bill of lading, shall be without effect, and this bill of lading shall be enforceable according to its original tenor.

..... Railroad Company.
Shippers No.
ORDER BILL OF LADING-ORIGINAL.
Agents No.

from the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned and destined as indicated below, which said Company agrees to carry to its usual place of delivery at said destination, it is to remain liable to the shipper for the cargo carried on the vessel to said destination, it is to remain liable to the shipper for all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the conditions, whether printed or written, herein contained (including conditions on back hereof) and which are agreed to by the shipper and accepted for himself and his assigns.

The Rate of Freight from

to..... is in Cents per 100 Lbs. IF Special

IF.....Class 1st	IF 1st Class	IF 2d Class	IF 3d Class	IF 4th Class	IF 5th Class	IF Class A	IF Class B	IF Class C	IF Class D	IF Class E	PO#.....
------------------	--------------	-------------	-------------	--------------	--------------	------------	------------	------------	------------	------------	----------

Consigned to ORDER OF.....

Destination.....State of.....County of.....

Notify.....

At State of County of,

Route Car Initial Car No

[illegible]

..... Shipper. Agent.

Per Per

(This Bill of Lading is to be signed by the shipper and agent of the carrier issuing same.)

FREIGHT SHIPPING PAPERS

provisions being the exemption from liability for loss or damage due to "the act of God, the public enemy, quarantine, the authority of law, or the act or default of the shipper or owner, or for differences in weights of grain, seed, or other commodities caused by natural shrinkage or discrepancies in elevator weights," fire occurring forty-eight hours after notice of arrival, strikes and riots, and delays ordered by the owner of the goods. The bill of lading is, therefore, a receipt and also a contract between shipper and carrier.

All copies of the straight bill of lading are printed on white paper, and may be made out in the name of either the railway or a fast freight line. The original is sent to the consignee by the shipper, one copy known as the "memorandum" is retained by the shipper, and another, known as the "shipping order," is filed by the freight agent. Upon presentation of the original and payment of charges due, the freight is delivered to the consignee.

The *order bill of lading* (Form 2) is issued whenever the shipper wishes payment for his goods immediately, or before delivery to the consignee. The contract conditions and the items specified are identical with those of the straight bill, but the freight is consigned to the order of the shipper instead of to the consignee, and with the stipulation that the freight is not to be delivered to the consignee except on presentation of the original order bill properly indorsed. The original is printed on yellow and the memorandum and shipping order on blue paper in order to avoid the possibility of fraud.

The original order bill of lading is a negotiable instrument, which when attached to a draft on the purchaser of the goods, may, when properly indorsed, be discounted at the shipper's bank. The bank then sends the bill and

THE FREIGHT SERVICE

draft to its correspondent in the city to which the goods are billed. This bank, after collecting the amount of the draft from the purchaser, gives to him the original order bill indorsed by the shipper, and this enables him to obtain his goods from the railway.

In addition to the uniform straight and order bills of lading, there are various other forms to meet particular needs. A *special bill of lading* is issued in case the shipper prefers not to accept the limitations of the uniform contract but wishes to be guaranteed against all risk of loss or damage from whatever cause. Generally, a uniform bill, either straight or order, is stamped in the proper way by the local agent. In return for the insurance demanded, the freight rates charged in Official Classification Territory are increased by ten per cent, although in some sections the increase is twenty per cent.

A uniform *export bill of lading* (Form 3) has been widely adopted. It is an elaborate document containing the name of the shipper and consignee, shipping point and destination, marks, numbers, description, weight of the articles billed, car number and initials, port of shipment and receipt, ocean route, freight charges, and signatures of the shipper and freight agent. The contract provisions contain thirty-two sections separately stipulating the conditions under which the freight is to be delivered (1) to the port of shipment, (2) to the port of receipt, and (3) to its ultimate destination. Various railways have not accepted the standard bill, and some of the forms used contain limiting provisions which are even more detailed and extensive, while others are relatively simple.

Many lines in the West use a *grain bill of lading* for the shipment of grain. It specifies the storage of the grain in case of delay on the part of the consignee or connecting

Property shipped under common carrier's liability and not subject to all the terms and conditions of the Uniform Bill of Lading will be carried under the terms set forth in Rule 1 of this Classification

14. That freight prepaid will not be returned, goods lost or not lost.

15. That parcels for different consignees collected or made up in single packages addressed to one consignee, pay full freight on each parcel.

16. That freight payable on weight is to be paid on gross weight loaded from ocean steamer, unless otherwise agreed to or herein otherwise provided, or unless the carrier elects to take the freight on the bill of lading weight, but inland freight and charges paid on wheat, peas, maize, or other grains, or seed, or other bulk articles, from point of shipment to seaboard, shall be paid by consignee at destination on the weight delivered on board ocean steamer.

17. It is stipulated that in case the whole or any part of the articles specified herein be prevented by any cause from going in the first steamer leaving after the arrival of such articles at said port, the carrier is only bound to forward them by succeeding steamer employed in the steamship line, or if deemed necessary by said carrier it may forward them in other steamers.

18. That the property covered by this bill of lading is subject to all conditions expressed in the regular forms of bills of lading in use by the steamship company at time of shipment, and to all local rules and regulations in port of destination not expressly provided for by the clauses herein.

19. That if the goods are destined beyond the port (B) second above mentioned, the transshipment to connecting carrier shall be at the risk of the owner of the goods, but at steamer's expense, and that all liability of the Steamship Company hereunder terminates on the delivery to connecting carrier.

III.—With respect to the service after delivery at the port (B) second above mentioned, and until delivery at ultimate destination if destined beyond that port, it is agreed that:—

1. In case the regular steamship service to final port of delivery should for any reason be suspended or interrupted, the carrier at the option of the owner or consignee of the goods, or the holder of the bill of lading, may forward the goods to the nearest available port, this to be considered a final delivery; or to store them at the port (B) second above mentioned at the risk and expense of the goods until regular service to final port of destination is opened again.

2. That the property shall be subject exclusively to all the conditions of the carrier or carriers completing the transit; the duty of notification above provided for shall fall exclusively with the obligation of the carrier completing the transit, and no prior carrier shall be responsible for the fulfillment of that obligation.

AND FINALLY, in accepting this bill of lading, the shipper, owner and consignee of the goods, and the holder of the bill of lading, agree to be bound by all of its stipulations, exceptions and conditions, whether written or printed, as fully as if they were all signed by such shipper, owner, consignee or holder.

IN WITNESS WHEREOF, The Agent signing, on behalf of the said The _____ (ISSUING) Company, and of the said Ocean Steamship Company, or Ocean Steamer and her owner, severally and not jointly, hath affixed to this Bill of Lading all of this tenor and date, one of which Bills being accomplished, the others to stand void.

Dated at _____ this _____ day of _____ 190____ Agent.
On behalf of Carriers severally but not jointly.

NOTE.—The following form of Ocean Abstract may be printed on the back of the Export Bill of Lading, or may be printed on separate slips, for the use of agents at the seaboard, at the option of the issuing company.

To be used exclusively by the agents at the seaboard and not by the holder of the Bill of Lading.	Bill of Lading No.	Lot No.	Contract No.
	Through, Rate,	19.	
	Ship's Proportion	L.	
	Inland Proportion	L.	
	Advance Charges	L.	
Total		L.	

BACK OF FORM 3.



FREIGHT SHIPPING PAPERS

line, demurrage charges, weight, kind of grain, initials and number of the car, name of the shipper, consignee, point of shipment and destination, and signatures of the shipper and agent. A *government bill of lading* is made out to cover

C. & A. P. R.	
Pennsylvania Railroad Company.	
Guaranty.	
_____ Station,	
_____ 190	
<p>_____ hereby guarantee to the Pennsylvania Railroad Company the payment of freight and charges from _____ to destination on all shipments made by _____ of perishable property during _____ on which, by the rules of said Company and its railroad connections, the prepayment of freight is required, and which in consideration of this guaranty, the said Company has shipped or will ship without such prepayment, and do hereby agree to pay to the said Pennsylvania Railroad Company, from time to time, and as often as the occasion therefor may arise hereunder, the amount due and charged on the same immediately upon notice from said Company of the refusal of the consignee or consignees to receive such freight or to pay the charges on the same. The said Company will not be bound hereby to make such shipments without prepayment, save at its election from time to time.</p>	
<p>Witness _____ hand and seal this day and date above written.</p>	
Attest:)	
_____	_____
_____	_____
_____	_____

FORM 4

government shipments; and the uniform live-stock contract, mentioned below, serves as a bill of lading, as well as a release.

RELEASES AND GUARANTEES

Before certain kinds of freight are accepted for shipment it is customary to require the shipper to sign a *re-*

THE FREIGHT SERVICE

lease, the articles subject to a release being specified in the classifications. If the shipper refuses to sign the release, he is obliged to pay higher rates, and usually the charges must be prepaid. Many lines in the West require the signing of a *furniture release* or *limited contract for household goods and emigrant's movables* which limits the company's total liability to five dollars per 100 pounds, regardless of whether the damage is or is not due to negligence. Some railways further require a *guaranty* of freight charges by the shipper and limit the liability to the actual line on which the damage occurs, but the Official Classification requires prepaid charges in the case of this traffic and avoids the need of a guaranty. Lines in the East and South usually have no special form, but stamp the bills of lading or shipper's receipt with a release stamp, which limits the liability upon the articles to five dollars per 100 pounds.

A similar release, known as a *guaranty for perishable or other property of doubtful value* (Form 4), or *limited liability contract for the transportation of perishable property* is on many lines executed in shipping perishable goods such as dressed meats. This release exempts the company from liability for loss or damage due to "leakage, decay, loss, or damage from the effects of heat or cold, or from any other cause whatsoever not the result of collision of trains or of cars being thrown from the track while in transit," and guarantees the payment of all freight charges.

A *standard or uniform live-stock contract* (Form 5) has been widely adopted, the provisions of which specify the respective duties of the shipper and carrier of the live stock, and limit the carrier's liability to sums varying from five dollars per head, in the case of sheep, to one hundred dollars each for horses, with a maximum of \$1,200 per car load. Unless it is accepted by the shipper the live-stock

_____)

_____ }
Witness

BACK OF FORM 5.

INSET TO FACE PAGE 106.

Release for Man or Men in Charge:

In consideration of the carriage of the undersigned upon a freight train of the carrier or carriers named in the within contract without charge, other than the sum paid or to be paid for the carriage upon said freight train of the live stock mentioned in said contract, of which live stock _____ in charge, the undersigned do _____ hereby voluntarily assume all risk of accidents or damage to _____ person or property, and do _____ hereby release and discharge the said carrier or carriers from every and all claims, liabilities and demands of every kind, nature and description for or on account of any personal injury or damage of any kind sustained by the undersigned or in charge of said stock, whether the same be caused by the negligence of the said carrier or carriers or any of its or their employees or otherwise.

Signature of
Man in Charge.

GENERAL RELEASE
FREIGHT DEPARTMENT

.....Station,191

This Agreement, made this day, between the
NORTH AND SOUTH RAILROAD COMPANY,
PARTY OF THE FIRST PART, for itself and connecting
lines and _____

_____ PARTY OF THE SECOND PART,
witnesseth: For and in consideration of the price, viz:
Released Tariff Rates, subject to the different classifica-
tions now in use, or which may come in use, during the
existence of this contract, at which the company agree
to transport _____

_____ by its lines from any Station on the lines of the
North and South Railroad Company, or to any Station
on the lines of any Railroad Company with which the
road of the said first part connects, it is hereby mutually
agreed that the said companies shall not be liable for any
damage said property may sustain from breakage, or from
being damaged by fire, or water, or any other cause what-
ever—Except such as may result from collision of trains,
or cars being thrown from the track, and that no action
for any damages shall be prosecuted, except against the
company upon whose road the same shall have occurred.

This contract is to extend to all _____
or articles coming under the heads which are specified at
released rates in the classifications governing shipments
between the points concerned, shipped by or to party of
the second part up to _____ 191 and with
this provision, that either party may, at pleasure, annul
this contract, by giving ten days' written notice of inten-
tion to do so.

NORTH AND SOUTH RAILROAD COMPANY

By.....

.....

FORM 6.—CARRIER'S RELEASE FROM LIABILITY FOR PERISHABLE
Goods.

FREIGHT SHIPPING PAPERS

rates are increased by twenty per cent. The contract, moreover, serves as the bill of lading, the coupon attached to it being the agent's memorandum.

On the back of the live-stock contract is a *release for man or men in charge*, by which the caretaker agrees to release the railway from all liability on account of any personal injuries regardless of cause. Throughout the West, moreover, the live-stock contract is not issued until the government inspector has issued a *government inspection certificate*, showing all brands or other marks of identification, and, in the case of sheep, the absence of disease.

Articles for which the carrier has no special form, but which in the classification are subject to a release, are, in the West, usually covered by a *general release* (Form 6). This, in the case of many companies, exempts the carrier from all liability for damages "except such as may result from the collision of trains or cars being thrown from the track," and specifies that actions for damages shall be directed against the line on which they actually occurred. In "official" territory the general release, as applicable to articles such as ore, zinc, raw silk, plates, stone blocks and slabs, watches, slate and various others specified in the classification, is stamped upon the original bill of lading and the shipping order, and limits the company's liability to a fixed sum. A similar stamp is used throughout the South. Shippers regularly forwarding articles subject to release frequently sign an *annual release*, limiting the railway's liability and guaranteeing the payment of freight charges. Limited liability contracts are unlawful in Texas and Nebraska, and their validity in cases of negligence is a matter of divided opinion. The consensus of legal opinion, however, is that in the absence of statute a special con-

THE FREIGHT SERVICE

tract limiting the value of freight in return for lower rates is lawful and valid unless gross negligence can be shown.

WAYBILLS

The railway keeps account of all shipments made by means of waybills, of which there are several forms. The *local waybill*, used for freight not leaving the company's lines, contains a number and date, initials and number of the car, name of the shipper and consignee, destination, point of shipment, marks and description of articles, weight, tariff or class, rate, charges, advances and amounts prepaid and the Agent's signature. The waybills used by some lines also contain instructions as to the length and capacity of the car, and list of places at which it shall be stopped and weighed. There are spaces upon the back of such waybills for notations by the Train Conductor. The original waybill either accompanies the freight or is forwarded to destination by mail, and if sent by mail, a card waybill, described below, is given to the Conductor. One copy of the waybill is sent to the Auditor of Freight Receipts and another is filed in the office of the Forwarding Agent.

Interline waybills (Form 7) differ from local waybills chiefly in that they route a shipment over specified lines of the company receiving the freight to some point on another (a "foreign") railway. A copy of the interline waybill is sent to each of the railways concerned in the shipment and to any freight association of which the carrier is a member, as well as to the Auditor of Freight Receipts. On some roads the interline waybill, in addition to the usual specifications, contains a series number indicating the junction point at which the freight is to be turned over to the foreign line; spaces in which the agents at all junction points are to stamp the names of their stations

Car No. _____	
To. HARLEM RIVER.	
Via _____	
Lading _____	
Combined Weight of Car and } Lading for Engine rating. } _____ Net Tons.	
Re-ice at _____	
<small>G. T. & P. R.</small> PENNSYLVANIA RAILROAD. Phila'd'a, Balto. & Washington R. R. West Jersey & Seashore R. R. Northern Central Railway.	
From _____	
Shipper _____	
Consignee _____	
Destination _____	
Via _____	
Prepaid \$ _____	To Collect \$ _____
Marked Capacity of Car _____ lbs.	
ESTIMATED WEIGHT.	ACTUAL WEIGHT.
_____ lbs.	Gross _____ lbs.
WEIGHED AT: _____	Tare _____ lbs.
_____ 190	Net _____ lbs.
Date _____ 190	Agent _____
Transferred to _____ Car No. _____	
At _____	Date _____ 190
<small>This card must be used for cars containing freight loaded to NEW ENGLAND points only, and the regular way-bill, with a copy of same, should be sent to Agent at Western Transfer for New York.</small>	

FORM 8.

Form 149

Chicago, Milwaukee & St. Paul Railway.

EMPTY CAR SLIP.

Car Number

Initials

Class

From

To

Date 19

Deliver to R'y.

Order No.

This slip is for use in distributing *Empty* cars. Its use for cars containing freight of any kind is positively forbidden.

A separate slip must accompany each empty car through to destination. In billing Empty Foreign Cars home, the Junction Station should be shown. The destination should never read "*Home*." When Foreign Cars are sent to stations on this road to be used for home loading, upon orders of the Superintendent of Transportation, the *Order Number* should be shown on empty car slips.

Empty Foreign Cars billed to Chicago for delivery to foreign lines, the road to which car is to be delivered should be shown.

The agent at destination will return these slips to the Superintendent of Transportation by first train mail, showing date of arrival of car.

The class of cars should always be shown on these slips stating whether Box, Furniture, Stock, Refrigerator, Flat, Gondola, Stone Dumps or Ore Cars. If box cars 33 feet or over in length, say "L-Bx."

Gen'l Superintendent.

FORM 9.

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and dates of receipt and forwarding; also spaces for the stamp of the Agent at destination and the signature of the last conductor in charge. Much freight is not sent on interline waybills, but is rebilled at junction points.

When the quarter-, half-, or whole-sheet waybills are not sent with the freight car, but are later made out and forwarded by mail, the Conductor, as stated above, receives a *card waybill* (Form 8) or "slip bill." The usual card waybill contains car initials and number, destination, route, nature of articles, weight, name of consignee and agent, date and stipulation as to transferring goods from one car to another. Usually there is a special card waybill for car load shipments, and another for freight charged at less than car load rates. Some, moreover, are made out in the name of the railway and others in that of a fast freight line. Special card waybills are used to ship various special commodities. Thus there is a *bituminous coal card waybill*, containing weight and marked capacity of the car, initials and number of the car, shipping point and destination, name of shipper and consignee, and space for the stamp of the Billing Agent. An *empty car slip* (Form 9) is used for billing empty cars, and a "*mem*" bill is made out in shipping company freight, in case the Agent has not had time to prepare a regular waybill.

Aside from the regular local and interline waybills, there are various others used in billing special commodities. Many railways have a *perishable goods waybill*, differing from the ordinary bill in color and containing stipulations as to refrigeration and other special services rendered. Frequently, in the West, there is also a *waybill for live stock*, which in addition to the usual stipulations states the kinds and numbers of animals, time of loading, place of feeding, and has an attached coupon containing informa-

THE FREIGHT SERVICE

tion for the use of the stockyard manager. Waybills of distinctive color are frequently used in billing coal shipments.

A special *milk waybill* is sometimes used in shipping milk on passenger trains. Instead of the usual car number, it specifies the train number and the number of cans shipped. After being made out by the Forwarding Agent, it is delivered to the train baggage man who, after checking it, signs and delivers it to the freight agent at destination. The consignee signs it before the milk is delivered to him.

In billing company freight a *waybill for company freight* is used. It differs from the commercial waybill in that instead of the usual columns for charges, advances, and sums prepaid, it contains spaces for the date of delivery to the consignee and for his signature. It is not copied or numbered consecutively with the waybills for commercial freight. Some lines, such as the Pennsylvania Railroad, have arrangements for shipping company freight on regular commercial waybills.

In case errors are discovered, a *correction blank* is filled out by the Forwarding Agent and sent to the Receiving Agent and Auditor. It contains reference to the original waybill with the request that the original be changed as specified. The same blank is used for errors discovered by the receiving agent.

FREIGHT BILL AND NOTICE OF ARRIVAL

Upon arrival of freight at its destination the Agent makes out a *freight or expense bill* (Form 10) in duplicate. It contains a record of the waybill, describes the goods that have arrived, and states the total amount to be collected. Upon payment of the charges it is signed by the Agent and given to the consignee. The duplicate

FREIGHT SHIPPING PAPERS

copy is torn off and sent to the consignee as a *notice of arrival* (Form 11). It contains exactly the same items as the freight bill, and upon delivery of the freight it is

[illegible]

FORM 10.

signed by the consignee and handed to the freight agent for his office files. An improvement and recent variation from this practice is the triplicate expense bill of the Penn-

[illegible]**FORM 11.**

THE FREIGHT SERVICE

sylvania Railroad. Part one (Form 12) is the *notice of arrival*; part two (Form 13) is a *delivery receipt* to be

WEST JERSEY & SEASHORE RAILROAD COMPANY

ARRIVAL NOTICE

A. D. 9009
1-1-12

Freight Bill No. _____

Atlantic City Station

101

The following articles have been received, assigned to you, and are now ready for delivery at the above named station on payment of charges due thereon. Please send for same immediately, and present the notes and bill of lading when freight is called for. If not called for in person **do** not order for delivery as lost parcel.

Waybill No. _____ Date _____ From _____ Car No. _____
Shipper _____ Original Point of Shipment _____ Original Car No. _____

Route		Connecting Line Reference			
Number of Packages, Articles and Marks	Weight	Rate	Freight Charges	Advances	TOTAL

Property will be stored at owner's risk and expense beginning _____ 101

Demurrage charges at \$1 per car per day or fraction thereof will accrue from _____ 101

We accept no responsibility for damage to the contents after freight has been collected hereafter shown.

Rate sheet payable to West Jersey & Seashore Railroad Company, and sent to Freight Agent, W. J. & S. R. Co., Atlantic City, N. J.

Freight Agent
(CHECK)

FORM 12.

DELIVERY RECEIPT

A. D. 9009
1-1-12

Freight Bill No. _____

Atlantic City Station

10

Received from **West Jersey & Seashore R. R. Co.**, in good condition, the following articles:

Waybill No. _____ Date _____ From _____ Car No. _____
Shipper _____ Original Point of Shipment _____ Original Car No. _____

Route		Connecting Line Reference			
Number of Packages, Articles and Marks	Weight	Rate	Freight Charges	Advances	TOTAL

Property will be stored at owner's risk and expense beginning _____ 101

Demurrage charges at \$1 per car per day or fraction thereof will accrue from _____ 101

Signature _____

Business _____

Date of Delivery _____

101

Our Ship agent is John. Freight will not be. Receipt must be signed and date of delivery of freight shown.

(CHECK)

FORM 13.

FREIGHT SHIPPING PAPERS

signed by the consignee upon delivery of the freight to him; and part three (Form 14) is the *freight bill*. The three forms are filled in at one writing. The practice as to prepaid freight varies, some lines merely stamping the

[illegible]**FORM 14.**

word "paid" in the column of total charges, while others have a separate *prepaid freight bill* which differs from the *collect freight bill* in color and is made out to the shipper instead of to the consignee.

In case the consignee loses the original bill and wishes another, some lines will issue one, but stamp it "copy," and stipulate that it is not to be used in making claims for overcharges. Others issue a *statement of billing*, which contains all the expense items of the original freight bill, but is not signed by the agent.

On some lines it is customary to send out *mailing cards* to consignees at certain points. The cards are mailed immediately upon the arrival of the freight, and inform

THE FREIGHT SERVICE

the consignee that certain articles from a given place with certain charges due have arrived, and that demurrage will be collected unless the goods are removed within a specified number of hours.

OVER, SHORT, AND BAD-ORDER REPORTS

If, upon the arrival of the freight, the Receiving Agent finds that the car contains more articles than are listed in the waybill, he makes out an *over report*. This contains a record of the waybill, name of shipper and consignee, destination, train number, Conductor's name, seal record, statement of articles billed and articles received, and two series of questions to be answered respectively by the Billing and Receiving Agent. On some lines one copy of this report is sent to the Billing Agent, who answers the required questions and returns it. Another copy is sent to the Freight Claim Agent, and when the excess articles are accounted for or disposed of, the Receiving Agent advises him on special *over accounted for blank*. Other companies require the over report to be sent to the Billing Agent, who returns it with answered questions. If the over freight is accounted for, the report is filled by the Receiving Agent, and if not, the report is sent to the Freight Claim Agent.

In case the receiving agent finds less freight in the car than is billed, he uses a similar paper known as a *short report*, which is, on some lines, sent to the Forwarding Agent, who returns it with the questions answered. A copy is also sent to the Freight Claim Agent; and, if the short freight is accounted for, the Receiving Agent later sends to him an *adjustment of freight short report*. On other roads a report is sent to the freight claim agent only in case the error is not accounted for.

All damaged freight is reported to the Forwarding Agent

PENNSYLVANIA RAILROAD COMPANY.

Station, _____ 100
DIVISION.

BAD ORDER REPORT

AGENT'S NO.

Commence with No. 1 first day of next year.

DELIVERING AGENT'S REPORT	FORWARDING AGENT'S REPLY
To _____ Agent.	To _____ Agent.
Station _____	Station _____
The following freight was received at this Station in bad order	
On _____ 100	A. In what condition received and receipted for?
Billed from _____ Date, _____ 100	
W.-B. No. _____ Car No. _____ Initial _____	B. Was the freight loaded by you or by the shipper?
Transferred at _____ to Car No. _____ Initial _____	
Connecting Line W.-B. Reference _____	C. If loaded by the shipper, was receipt so given?
Consigned to _____	
Articles: _____	D. All other information likely to be of use.
1. Nature of damage, _____	
2. Apparent cause, _____	
3. How loaded? _____	
4. Any evidence of rough usage? _____	
5. When was damage first noticed? _____	
6. Was car sealed and with what impressions? _____	
7. Has the freight been detained? _____	
8. Give notations on Way-bill, if any, including transfers. _____	
9. Estimate value of damage. _____	
10. Give full particulars. _____	
Signature: _____ Delivering Agent.	Signature: _____ Forwarding Agent.
	Station _____ 100

* Be particular to insert date of arrival.
The Agent will use this form for reporting freight received damaged, filling in replies to questions 1 to 10 and send it to the Forwarding Agent, who will reply to questions A to D and return the form to the Delivering Agent. The Delivering Agent will file the report awaiting claim, or demand from the Freight Claim Agent, unless the whole or any part of the shipment cannot be delivered, in which case the report must be forwarded to the Freight Claim Agent. Should claim be made, the Agent must forward it with the report and all other information obtainable to the Freight Claim Agent.

AGENT MAKING REPORT MUST FILL IN BLANKS ON BACK OF THIS SHEET.

Freight Claim Agent.

FORM 15. [Over.]

AGENT MAKING THIS REPORT MUST
FILL IN SPACES BELOW.

BAD ORDER REPORT.

Delivering Agent's No. _____

Date made, _____ 190

Delivering Station,

BACK OF FORM 15.

**PENNSYLVANIA, BALTIMORE & WASHINGTON RAILROAD COMPANY
NORTHERN CENTRAL RAILWAY COMPANY
WEST VIRGINIA & PENNSYLVANIA RAILROAD COMPANY**

To Freight Agent _____ Railroad _____ Station: _____

The following consignment shipped from this station
by _____, billed to your station, is claimed not to have been
received by consignee. _____ Way-Bill No. _____ Date _____ 190
Car _____ Initial _____ Via _____ Coded to _____

Articles _____

Consignee _____ Destination _____

Please trace shipment through to destination, giving date of arrival and delivery, and name of party
who signed delivery receipt; or if short, give reference to Short Report and any information noted on
way-bill as to shortage, returning tracer direct to

Date _____ 190 _____ Agent _____ Station _____

1 This form should only be used for tracing loss thru railroad shipments which shipper claims have not been delivered to consignee, sufficient time having elapsed for freight to reach destination.

2 Agents must not send out Treasors immediately following date of shipment.

3 Do not trace by wire unless absolutely necessary.

4 Agent starting this tracer, as well as each re-billing agent, will forward it direct to the point to which the property was way-billed, re-billing agents to note billing and forwarding records before.

5 Do not hold Treasors, awaiting arrival of property, or receive re-billing agents' bills and return it until the property is shown to be lost. If the property is shown to be lost or destroyed, will advise shipper, the result of tracing and forward this form accurately to the Freight Claims Agent.

[illegible]

125

FREIGHT SHIPPING PAPERS

on a *bad order* or *damaged report* (Form 15). The use of this likewise varies, some lines requiring a copy to be sent to the Freight Claim Agent immediately, while on others it is sent to the Claim Agent only in case the consignee does not accept the freight or files a claim for damage.

A *refused* or *unclaimed report* is sent to the Freight Claim Agent in case of refused or unclaimed freight. A coupon is retained by the Receiving Agent until final disposition of the articles, when it is also mailed to him and entered on the records.

TRACERS

When it becomes impossible to locate short freight or to fix the responsibility for damaged freight in the ordinary way, a *tracer* (Form 16) is started. It is sent by the Receiving Agent to junction points and stations through which freight ordinarily moves, or to Train Conductor, and requires the agents or conductors to supply from their records all information relating to the shipment in question. Another form of tracer is sent out by the Forwarding Agent to trace delayed freight. The tracer is finally returned to him, and, if the freight is shown to be lost, the tracer is sent to the Freight Claim Agent.

CLAIM BLANKS

In case of loss, damage or overcharge, of any kind, the owner of the freight may make a claim for damages or for refund. Such a claim is sent to the Freight Claim Agent by the local agent on a *claim blank* provided for the purpose. It states the name of the claimant and his address, kind of freight shipped and the exact amount claimed. It is ordinarily accompanied by the original freight bill, an invoice showing cost of the articles, if such has been made,

THE FREIGHT SERVICE

the bill of lading, a copy of short or bad-order reports, and an itemized bill of the claimant. In case of refusal to allow the original invoice to be sent, the agent examines it and if correct certifies to that effect. The Freight Claim Agent, after examining all records, makes an adjustment with the claimant.

In order to make the foregoing description of freight papers more concrete, the student should secure a set of blank papers from the agent of his nearest freight station. Such forms as are not to be found in a local freight station can doubtless be secured by application to the office of the Division or General Freight Agent.

REFERENCES

1. B. K. and W. F. Elliott, "A Treatise on the Law of Railroads," Indianapolis, 1907, vol. iv, sections 1500 and 1510.
2. F. L. Meyer, "Twentieth Century Manual of Railway Station Service," Chicago, 1906.
3. Twenty-second Annual Report of the Interstate Commerce Commission, Washington, 1908.
4. Official Classification No. 35, in effect January 1, 1910.

CHAPTER VII

ACCOUNTING OF FREIGHT REVENUE

Freight accounting departments, scope of present study—Freight papers and accounts kept by local Station Agent—Accounting work of the general office—Accounting for money handled by agents—Work done by the Traveling Auditor and Accountant—Present status of freight auditing—The Hollerith machine—References.

KNOWLEDGE of the receipts and disbursements connected with the freight and other services and of the conduct of each part of the activities of a great railroad can be secured only by most systematic records and accounts. The work of the accounting department is ordinarily subdivided among four officers, headed respectively by a Comptroller or General Auditor, an Auditor of Freight Receipts, an Auditor of Passenger Receipts, and an Auditor of Disbursements. Individual lines, because of the magnitude of their business, the importance of some special commodity or the existence of some peculiar traffic agency, may also have an Auditor of Miscellaneous Receipts and Accounts, an Auditor of Coal Freight Receipts, or an Auditor of a fast freight line.

If this were a volume upon railway accounting it would be necessary to analyze the work of each of these auditors in detail; but in studying traffic and rates attention may be devoted chiefly to a description of the methods by which the freight and passenger services are checked up and the revenues are accounted for. It is essential that the student

THE FREIGHT SERVICE

of freight traffic should understand the work of the auditors of freight receipts, coal receipts, and other special revenue, and also of those portions of the work of the Comptroller and the Auditor of Miscellaneous Receipts and Accounts which directly concern the accounts of freight revenues. Likewise, that part of the work of the Treasurer's department which has to do with the handling of money collected from shippers, consignees, and passengers should be understood. The auditing of expenditures, the work of the Auditor of Disbursements, is no less important than that of accounting for revenues, but it may be omitted from a study of traffic and rates. The auditing of passenger receipts is discussed in another chapter (XXVIII).

For purposes of convenience the discussion of the accounting of freight revenue may be divided into (1) the work of the local agent, (2) the work of the general office, (3) the handling of money, and (4) the Traveling Auditor.

I. THE WORK OF THE STATION FREIGHT AGENT

Among the many duties of the Station Freight Agent are those of keeping station records and sending waybills and reports to the Auditor of Freight Receipts. His essential records are the *book or files of freight forwarded*, the *book or files of freight received*, and the *cash book*. In the first of the three books he enters the details of waybills forwarded; in the second of waybills received; and in the third he keeps a strict account of all money collected and remitted to the Treasurer, or deposited in the banks with which the railway company keeps accounts.

The primary document in the auditing of freight receipts is the *waybill* which either accompanies the shipment, or is forwarded by mail to the Receiving Agent. After goods arrive at destination the agent checks the waybill

1-800-618-5602 or 657-

Pennsylvania Railroad Company

Philadelphia, Baltimore & Washington Railroad Company
Northern Central Railway Company
West Jersey & Seashore Railroad Company

Daily Report of LOCAL Merchandise Freight Waybills Received

At _____ Station _____ 190

[illegible]

Form 1. [Over.]

TABULATING
NUMBER

Daily Report
of
LOCAL
Merchandise Freight
Waybills

Received at

Station

190

Instructions to Agents

1. Waybills for freight, the movement of which is exclusively over one Grand Division; also Expense Waybills between stations on the Pennsylvania R. R. (including North Avenue and Proble Avenue, Allegheny City; Sheridan, P., O. & St. L. Ry.; Grant St. and Penn St., Pittsburgh, and stations on the Bedford Division) and General Office are Local.

All other waybills are Interline.

2. Local waybills (except Local waybills for Company's material which should be reported on Interline received reports) should be reported on this blank on the day on which they are received, whether the property which they cover has arrived or not, these reports being reports of waybills received and not of property received.

3. Immediately on receipt of a local waybill and before reporting it, all proper corrections should be made in rates, extensions, additions, headings, etc., and the corrected figures entered on the Local Received Report.

When a notice of correction on a local waybill is issued by a receiving agent, the date of the Local Received Report on which the waybill appears should be noted plainly after the name of the receiving station.

4. Waybills received after the last day of the month in which they are dated and which will be included in the Monthly Report for that month, must be entered on separate reports, marked "Extra", numbered consecutively, and forwarded to the Auditor of Merchandise Freight Receipts each day up to and including the date of forwarding the Monthly Report.

5. The name of the month to which Extra-report waybills belong should be written in the space provided for the date, on the inside and endorsement of the report, and not the date on which the waybills are received, as in the case of regular daily reports.

6. Should any Local waybills dated in the previous month be received after the Monthly Report has been forwarded to the Auditor of Merchandise Freight Receipts, a separate extra Local received report not numbered but marked "Omitted" should be promptly sent to the Auditor.

7. The daily Recapitulation should be made on the Interline Received Report, but must not be made on the Local Received Report.

8. All daily and Extra Local Received reports should be forwarded to the Auditor of Merchandise Freight Receipts in envelope A. D. 1065 specially provided for that purpose.

BACK OF FORM 1.

ACCOUNTING OF FREIGHT REVENUE

with the freight received and sends the waybill with all notations made upon it by Conductor or Junction Agent to the Auditor of Freight Receipts. It is the Receiving Agent who in accounting is, on many roads, held responsible for correct charges. It is he who usually collects the charges; he has ample time to compute them correctly, and he sends the corrected waybill to the Auditor. Some lines now hold the Forwarding Agent responsible, in which case he and not the Receiving Agent sends the waybill to the Auditor.

Interline waybills accompany the freight to its destination on a foreign line, and thus afford an auditing record only for such line. For this reason, the Forwarding Agent, on some lines but not on all, is required to send a copy of the waybill to the Auditor of Freight Receipts of his company and usually to auditors of all intermediate lines of the through route; and it is a common practice for the

[illegible]**FORM 2.**

receiving line to send copies upon receipt of the original at destination.

Each local agent, in addition, sends to the Auditor of Freight Receipts reports or "abstracts" of all waybills

THE FREIGHT SERVICE

forwarded and received. They are required to be sent daily, weekly, or monthly, the requirements varying on different lines. Most companies prefer the plan of daily reports. Each day the agent of the Pennsylvania Railroad sends in a *daily report of local merchandise freight waybills received* (Form 1), stating the number and date of each waybill received, the weight of the freight, freight charges, advances, and amounts prepaid. A similar *daily report of merchandise freight waybills made* (Form 2) is sent by each agent. This affords a treble check upon the agents, since each waybill is reported twice and the waybill itself is sent to the Auditor.

Separate daily reports are also made of *interline waybills received* (Form 3), which, in addition to the items

[illegible]

FORM 3.

stated in the local abstracts, indicate the through route and junction point. Interline waybills made may be separately reported, or a single report may include all waybills made. Each day, likewise, the agent makes a *daily cash report or exhibit* (Forms 4 and 5) to the Treasurer or Cashier and to the Auditor. The Treasurer's copy shows the agent's daily

PENNSYLVANIA RAILROAD COMPANY

Philadelphia, Baltimore & Washington Railroad Company

Northern Central Railway Company

West Jersey & Seashore Railroad Company

AGENT'S
OFFICE NO**DAILY CASH EXHIBIT**

Date190

Station

Division

Balance from last report : . . .

Collections this day

Freight . . .

Passenger . . .

Misc. Passenger

TOTAL . . .

DEDUCTPrepaid at Junctions and
Advances settled .

Refunds paid .

Credit letters .

"Duplex" redeemed

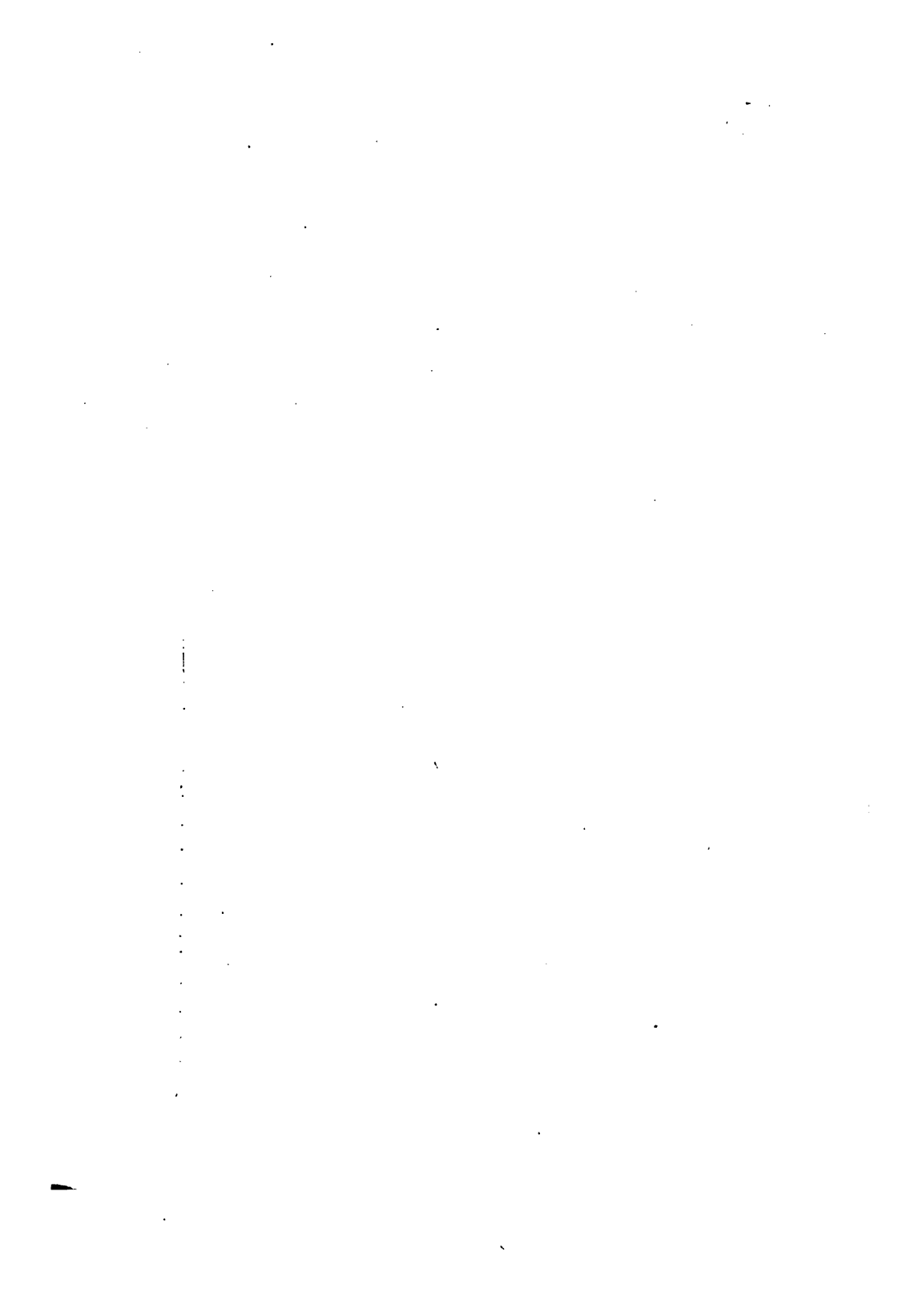
NET . . .

Remitted this day account
of month of

Balance on hand at close of day . .

Agent

Form 4.



The Pennsylvania Railroad Company.
Philadelphia, Baltimore & Washington Railroad Company.
Northern Central Railway Company.
West Jersey & Seashore Railroad Company.

Agent's Report
to
Treasurer.

_____ Station,

_____ Division,

_____ 190

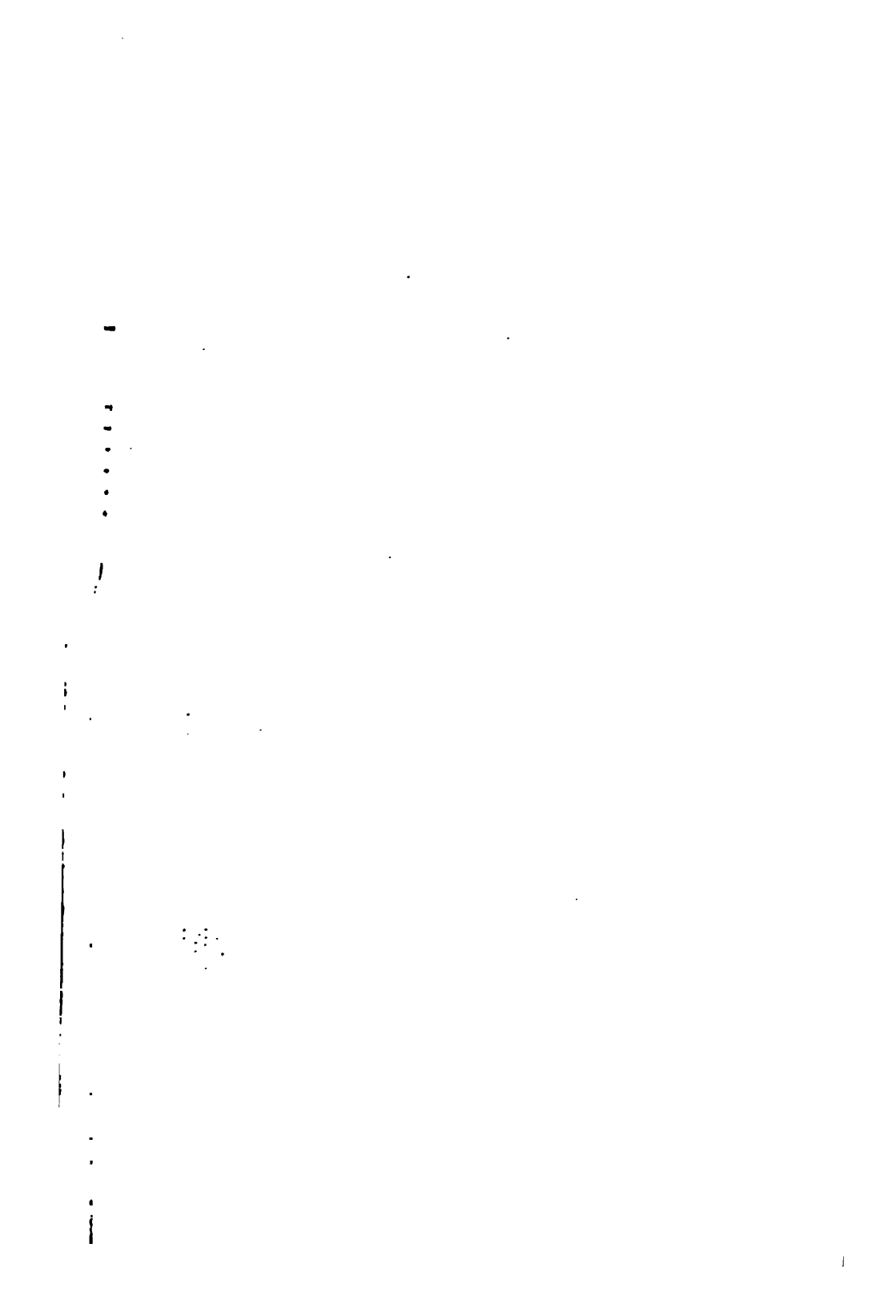
Remitted on Account of
AGENTS AND CONDUCTORS.

\$ _____

For Month of _____

Agent.

NOTE.—Agents will be particular to state the MONTH in which they will claim credit for Remittances on Monthly Reports to Auditors.







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ACCOUNTING OF FREIGHT REVENUE

debits and credits, while the Auditor's copy states the daily remittances made to the Treasurer or Cashier.

In addition to these daily reports, the agents are required to render *monthly reports* (Form 6). These may be made out either on the "received" or "forwarded" basis. On the "received" basis, "the agents close their abstracts of freight received with the waybills received on the last day of each month, and render their monthly freight reports and balance sheets forthwith." In case of the "forwarded" basis, they hold open their reports for a number of days after the close of the month, so that all freight shipped to that station and waybills issued during the previous month may be included.

The monthly report is a statement of the business of the period, but differs widely on various lines. On the Pennsylvania Railroad it is a summary of the totals of the daily abstracts and of the daily remittances to the Treasurer. For each day on separate sides of the report it shows the freight charges, amounts prepaid and advances on freight received and freight forwarded. All these items are totaled for the month as a whole. It contains also a duplicate space for corrections made by the Auditor. The Pennsylvania Railroad requires separate monthly reports on local and interline business.

Many companies require the Auditor to make a weekly estimate of freight earnings; and, when this is required, the Freight Agent is obliged to make a *weekly freight earnings report* (Form 7).

Some companies have detailed monthly reports of waybills received and forwarded, and a *monthly report or schedule of uncollected bills* (Form 8). All such uncollected items appearing for two successive months are covered by the agent's *application for relief of uncollected*

THE FREIGHT SERVICE

charges (Form 9). The Auditor, upon receipt of it, relieves the agent of the account or sees that he is recharged

NO. 40-100-1-10-100

THE PENNSYLVANIA RAILROAD COMPANY

PHILADELPHIA, BALTIMORE & WASHINGTON RAILROAD COMPANY
NORTHERN CENTRAL RAILWAY COMPANY
WEST JERSEY & SCHENECTADY RAILROAD COMPANY

CLASS SERVICE

Agent _____ Station _____

A. R. R. & A. _____

G. F. A. _____

G. F. A. _____ DIVISION

AGENT'S APPLICATION FOR RELIEF OF UNCOLLECTIBLE CHARGES

J. B. DONALDSON
Auditor Miscellaneous Receipts and Accounts

DEAR SIR:—

This Station stands charged as below upon Way-bill No. _____ From _____

Dated _____ 19 _____ Car No. _____ Covered by Freight Bill No. _____

of which a copy with all notations is attached

AS SHIPPED						
Shipper	Commodity and Description	Articles	Weight	Freight Charges	Accessories	Total

AS COLLECTED						
Shipper	Commodity and Description	Articles	Weight	Freight Charges	Accessories	Total

The amount for which relief is desired is _____

carried as uncollected on sheet _____ No. _____ of A. D. 8804 for the month of _____

Reason why charges cannot be collected _____

Notations on Way-bill regarding transfers and checking are as follows:

Transferred at _____ Checking: _____

to _____

Signature: _____

Freight Agent

Respectfully referred to _____

The amount of this claim has been transferred to the office of the Auditor of Miscellaneous Receipts and Accounts covering \$ _____

will be collected by this office. The balance amounting to \$ _____ should be collected by you through this office, or if collected, the same should be returned that the Agent's account may be relieved.

Date: _____ Auditor Miscellaneous Receipts and Accounts

FORM 9.

with it. Some lines also require a *station agent's monthly balance sheet* (Form 10), and a *special monthly report of*

ACCOUNTING OF FREIGHT REVENUE

miscellaneous freight charges and credits (Form 11). Some lines require a weekly balance sheet.

The local agent is also frequently required to make extensive statistical reports to the freight traffic department, such as a weekly commodity and tonnage report showing the tonnage of various commodities forwarded and received; monthly report of live stock, grain, lumber, and

[illegible]

FORM 10.

coal; monthly report of car-load freight; and daily interchange tonnage report. These reports, however, convey statistical information to the traffic department and are not made for accounting purposes. There is a wide difference of opinion as to how much statistical work the local agent should be required to do.

ACCOUNTING OF FREIGHT REVENUE

by assuming that the office work of accounting of freight receipts all comes under the Auditor of Freight Receipts. The principles of auditing are the same whether there is a single office for all, or separate offices for freight revenue from different sources.

There are various distinct duties performed by the office of the Auditor of Freight Receipts:

The first is that of revising the waybills sent by the local agents. The waybills are checked against the freight

A. D. 2810

No. **1198**

To Agent _____

The Pennsylvania Railroad Company
Philadelphia, Baltimore & Washington Railroad Company,
 Northern Central Railway Company,
 West Jersey & Seashore Railroad Company.

ACCOUNTING DEPARTMENT
 OFFICE OF AUDITOR MISCELLANEOUS RECEIPTS AND ACCOUNTS
SEVENTH STREET STATION

Philadelphia _____ 191__

C. 2145 11100

In the examination of your daily reports the errors, as stated below, are noted.

	REPORT	DATE	ACCOUNT	WAYBILL		CAR		DATE	DEBIT	CREDIT
				Rs.	Dls.	Rs.	Dls.			
As Reported										
As Corrected										

Correct your copy of these reports and enter the correct figures on your monthly report, A. D. 2807.

Yours truly,

Auditor of Miscellaneous Receipts and Accounts

FORM 12.

classifications and tariffs to detect errors in the rate charged. Freight charges, advances, and amounts prepaid are revised, and the Receiving Agent each day is notified on a *correction blank* (Form 12) as to any errors. Errors in amounts prepaid and advanced are likewise reported to the Forwarding Agent. Each month the total changes

THE FREIGHT SERVICE

are covered by a *discrepancy letter* (Form 13) showing the changes according to the daily report.

A second group of clerks check and balance the daily, weekly, or monthly reports made by the local agents. The reports of freight forwarded and received are checked

[illegible]**FORM 13.**

against each other, all errors are corrected and the columns are refooted. A corrected summary of waybills made is then recorded in the *record of freight transactions book* (Form 14), and this is checked against the daily waybills received reports. Form 14 is the upper part of a page from the freight transactions book of the Pennsylvania Railroad. This furnishes a complete record of all shipments, accounted for and not accounted for. The Auditor

[illegible][illegible]

THE FREIGHT SERVICE

of a large company has hundreds of these books because at least one page is given over to each pair of stations; and separate books are usually kept for local, interdivisional, and interline freight. The stations are grouped by districts so that scores of small points are entered with the larger station which they surround, and the number of books is in this way reduced. At the end of each month each page is footed and a total obtained which shows the aggregate monthly shipments between the two stations.

At the end of each month or shortly thereafter, depending upon whether the received or forwarded basis above defined is adhered to, the Auditor of Freight Receipts obtains the agents' monthly reports. These are carefully revised, all corrections entered upon the duplicate blank provided, and the agents notified. All remittances acknowledged by the Treasurer are compared with the amounts claimed by the agents. Differences are checked up with the daily reports and the agents are notified in the monthly audit letter. A condensed statement of aggregate amounts to be collected, the aggregate advances and amounts prepaid at each station, is, moreover, computed by the auditor and compared with the reported totals and all differences adjusted. The results, as shown by the daily and monthly agents' reports, are then condensed on *recapitulation sheets* or in a *recapitulation book*.

Before making complete entry in the general books, *interline freight settlements* are necessary. The columns of the various books containing the interline record of freight transactions are posted each month. The totals are entered on *special apportionment sheets* (Form 15) which show the agreed basis for settlement. The basis of settlement is arranged by the freight traffic department in the

ACCOUNTING OF FREIGHT REVENUE

form of agreed proportions which usually, though not always, are computed according to actual or constructive mileage. Each foreign line is then credited with the pro-

[illegible]**FORM 16.**

portion of freight charges and any advances and amounts prepaid on forwarded freight, and debited with all charges to be collected, advances, and amounts prepaid on freight received. The difference indicates the amount due to or

[illegible]**FORM 17.**

by each foreign line. An *interline freight account statement* (Form 16), together with an *abstract of the waybills included in the interline account* (Form 17), is sent to each

THE FREIGHT SERVICE

foreign line. Frequently it is also necessary to make settlements between grand divisions or constituent lines of a railway so that each corporation may obtain its portion of the freight revenue, and separate apportionment sheets are used for this purpose.

The proper entries of the monthly earnings may now be made in the *general journal*. Freight agents

A B NO

No 2 2000

THE PENNSYLVANIA RAILROAD COMPANY.

PHILADELPHIA, BALTIMORE & WASHINGTON RAILROAD COMPANY
NORTHUMBRIA CENTRAL RAILROAD COMPANY
WEST JERSEY & CLINTON RAILROAD COMPANY.

Office of the Auditor of _____ Freight Receipts

Comparative Statement of Through and Local _____ Freight Traffic

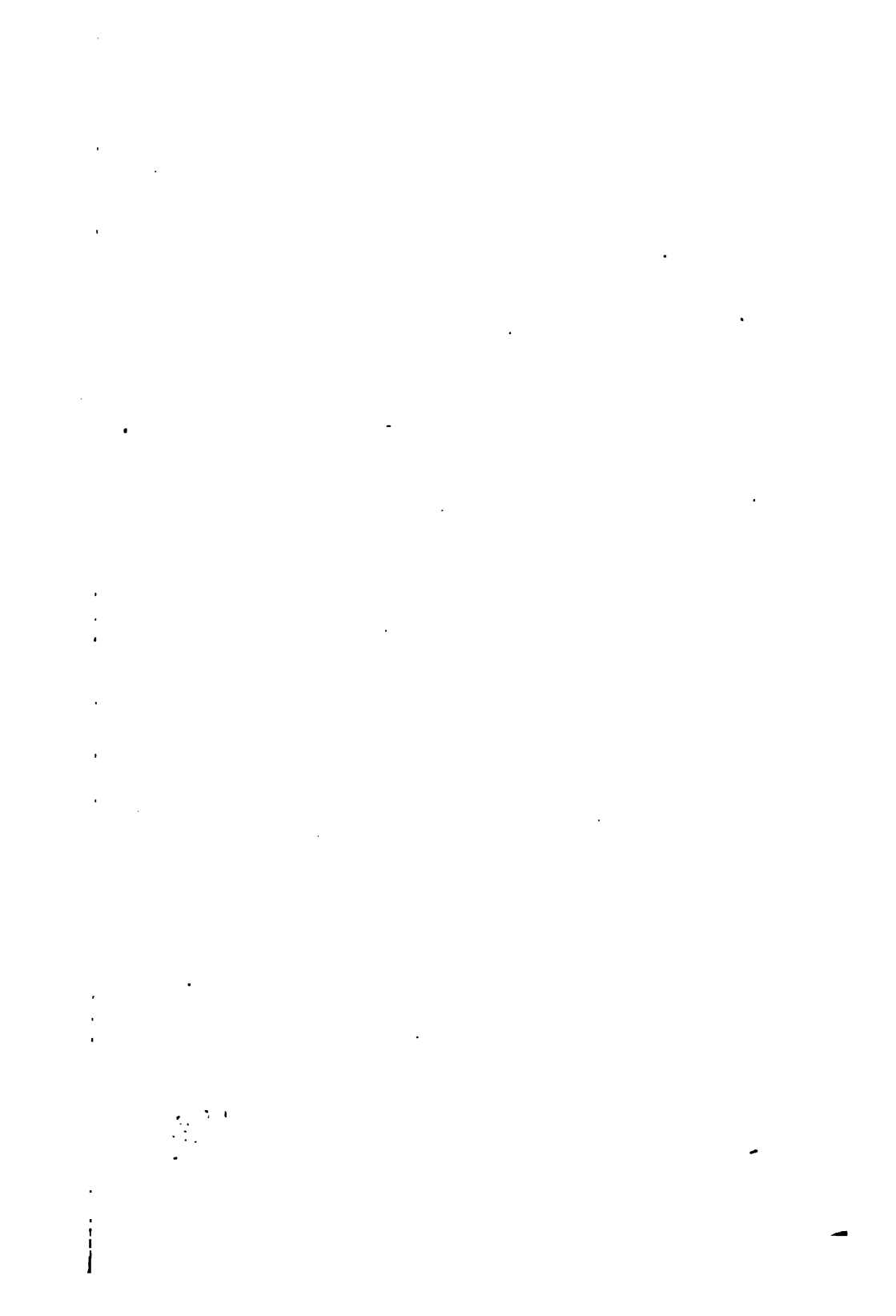
	18			19		
	TONS	TONS ONE MILE	REVENUE	TONS	TONS ONE MILE	REVENUE
Through Freight						
Local						
Total						

Auditor _____ Freight Receipts.

Philadelphia _____

FORM 18.

are debited with the earnings, and freight earnings are credited with an equal sum. Freight earnings are also divided so as to show the amount credited and debited





ACCOUNTING OF FREIGHT REVENUE

to each foreign and constituent line. Some lines still have a *freight accounts ledger* in which to post the final entries, but usually this extra book is dispensed with.

An additional group of clerks in the Auditor of Freight Traffic's office is required for statistical as distinct from purely accounting work. On special statistical sheets or in books they compile the number of pounds moving east and west, the total pounds moving one mile east and west, and the total revenue from traffic moving east and west. On still other statistical sheets they compute the tons, ton miles and revenues for each division of the railroad. And finally a *comparative statement of through and local traffic* in terms of tons, ton miles and revenues is prepared, and entered on appropriate sheets (Form 18). To satisfy the needs of the State Railroad Commissions, the statistical force also apportions the earnings by states. The requirements as to statistical data are not identical on the various railroads.

From the general journal and statistical records, reports are then made to the Comptroller or General Auditor, and entries are made by him in the general accounting books of the company. Revenues are entered in a *statement of revenue and expenses* record, of which there are usually two sets, one for the grand divisions and another for the small subdivisions of the line. The report of expenses submitted by the Auditor of Disbursements is likewise entered in these records. A condensed statement of the credits and debits to foreign and constituent lines is entered, either in a separate record or in the general ledger. Finally, entry is made in the *general ledger* of the Comptroller, in which the general accounts of the entire company are recorded.

THE FREIGHT SERVICE

On some railways the Comptroller has a *station agent's ledger*, or *statement of agency accounts*, but on others, such as the Pennsylvania Railroad, the station accounts are kept by the Auditor of Miscellaneous Receipts and Accounts (Form 19). Reports are made to this auditor by the Auditor of Merchandise Freight Receipts and all other auditors handling revenue accounts, and monthly balance sheets are sent in by the station agents. For each day all the items are entered in an *agent's consolidated daily record* (Form 20) so as to get the monthly total for each station. These totals in the form of debits and credits are then entered in the statement of agency accounts or station agent's ledger, and a grand total is obtained. An *audit letter* (Form 21) is sent to the station agents stating the results of the monthly audit and the errors to be corrected.

By properly computing all sources of income and expenses, the Comptroller is enabled to prepare the company's monthly income account, and by properly entering all assets and liabilities he prepares the monthly balance sheet of the company. Moreover, as was stated, the auditor makes a weekly estimate of freight earnings to the Comptroller based upon the weekly reports made by the local agents. These statements, as well as all actual statements of earnings, and all statistical data, are submitted by the Comptroller to the traffic and operating officials as they are required.

The forms of income accounts are prescribed by the Interstate Commerce Commission, which, since July 1, 1908, has required operating revenue to be divided into (1) revenue from transportation, and (2) revenue from operations other than transportation. These in turn are divided into twenty-one primary accounts:

Daily Record

• **Month**

[illegible]

BACK

22	23 REMITTED		24 CASH	25 CASH BOOK CREDITS FOR THE DAY	26 CREDIT CORRECTIONS	27 CASH ON HAND	28 UNSETTLED BILLS	29
	Checks							
								Balance from last Month Reported on A. O. 8863
								1
								2
								3
								4
								5
								6
								7
								8
								9
								10
								1
								2
								3
								4
								5
								6
								Totals
								Additions
								Debit
								Debit
								Totals on Monthly Report
								Balance to next Month. Reported on A. O. 8863

ACCOUNTING OF FREIGHT REVENUE

THE PENNSYLVANIA RAILROAD COMPANY

PHILADELPHIA, BALTIMORE & WASHINGTON RAILROAD COMPANY
NORTHEASTERN CENTRAL RAILWAY COMPANY
WEST JERSEY & SEASHORE RAILROAD COMPANY

Office of the Auditor of Miscellaneous Receipts and Accounts

General Office, Broad Street Station

A. M. R. & A. MONTHLY BALANCE SHEET

Philadelphia, _____ 19__

Mr. _____

Agent _____

Below find results from audit of your accounts shown on your

monthly balance sheet for _____ 19__

	Agent's Figures	Auditor's Figures	Debit	Credit
To Balance from last month				
" Errors per A. M. R. & A. balance sheet				
" Merchandise Freight				
" Coal Freight				
" Union Line				
" Empire Line				
" Miscellaneous Freight				
" " Passenger				
" Travelers Insurance				
" Postal Telegraph-Cable				
" Postal Telegraph-Cable receipts from operators as follows:				
" " Passenger				
" " Refunds unclaimed over two months				
" " Charge Letters A. M. R. & A.				
TOTAL				
By Balance from last month				
" Errors per A. M. R. & A. balance sheet				
" A. M. R. & A. Credit Letters				
" Duplex Memoranda				
" Remittances				
TOTAL				
Net Errors to be carried to next report, form A. D. 9609				
Bring forward balance as reported				
Yours truly				
Auditor Miscellaneous Receipts and Accounts				

FORM 21.

- I.—1. Freight revenue.
2. Passenger revenue.
3. Excess baggage revenue.
4. Parlor and chair car revenue.
5. Mail revenue.
6. Express revenue.
7. Milk revenue.
8. Other passenger train revenue.
9. Switching revenue.
10. Special service train revenue.
11. Miscellaneous transportation revenue.

THE FREIGHT SERVICE

- II.—12. Station and train privileges.
- 13. Parcel room receipts.
- 14. Storage—freight.
- 15. Storage—baggage.
- 16. Car service.
- 17. Telegraph and telephone service.
- 18. Rents of buildings and other property.
- 19. Miscellaneous.
- 20. Joint facilities revenue—Dr.
- 21. Joint facilities revenue—Cr.

The carriers may further subdivide their revenue accounts as they please, but these primary accounts must be maintained, and no other set of books is permissible.

III. THE HANDLING OF MONEY

The handling of the cash collected by the freight agents involves so many parties that it may perhaps be best considered separately. At stations where proper banking facilities are not available, the practice is to remit cash to the Treasurer or to designated depositories by train mail. It is accompanied by a *remittance slip*, which is generally made out in duplicate, the duplicate being receipted by the Treasurer or Cashier and returned to the agent.

The preferred practice is to deposit cash in local banks. It is inclosed in a sealed envelope with duplicate *deposit slips* (Form 22), and sent to the bank, where it is deposited to the credit of the company. The duplicate slip is stamped by the bank and sent to the Treasurer or Cashier of the railway company. It is here compared with the daily cash report made by the agent to the Treasurer or Cashier, then entered in the Treasurer's cash book, and afterwards forwarded to the Comptroller. It is now entered in the Comptroller's cash account, and sent on to the Auditor of Freight Receipts.

ACCOUNTING OF FREIGHT REVENUE

After it has been checked with the daily cash report or cash exhibit made by the agent to this official, it is entered to the credit of the agent's account. Each month the agent is debited with all waybills received and credited with the remittances reported by the Treasurer and Comptroller, and

U. S. 149-A.

_____ 190

_____ Agent.

_____ Station.

DEPOSIT TO THE CREDIT OF
THE PENNSYLVANIA RAILROAD COMPANY.
 (THIS SLIP TO BE RETAINED BY BANK.)

	DOLLARS	CENTS
Large Notes,		
Small Notes, 1's and 2's,		
Specie in Envelope, . .		
" " Bag,		
Checks (Not singly), . .		
 TOTAL,		

720 7-30-00 21% x 21%

FORM 22.

the balance indicates the amount of cash which the agent has on hand or is outstanding. As was stated above, this entire agency account on some railroads is kept by an Auditor of Miscellaneous Receipts and Accounts instead of by the Comptroller and Freight Auditors.

This extended method of depositing and auditing the cash account assures adequate check upon the local agent; while the independent receipt of a daily cash report from the agent and duplicate deposit slip from the bank enables the Auditor of Freight Receipts to keep a check upon the

THE FREIGHT SERVICE

Treasurer's office. It guarantees a high degree of safety and convenience, as it avoids the shipment of money and applies ordinary banking methods to the dealings between the agent and the Treasurer.

IV. THE TRAVELING AUDITOR

Attached, usually, to the Comptroller's or General Auditor's office of every railway company are a number of Traveling Auditors whose work it is to examine the accounts of both freight and ticket agents. The Traveling Auditor may at any time be ordered to some particular station, but usually he moves from one station to another according to his judgment. At any time, without previous notice, he may arrive at a Freight or Ticket Agent's office.

His principal work is to draw off the "account of the station from the date of the last balance given by the auditor to the date of his visit, and verify the assets claimed by the agent."¹ This is necessary to avoid any fictitious reports of assets being sent to the Auditor. He, likewise, instructs the agent as to the proper method of keeping records and making out reports in case he discovers other than willful error. It is the Traveling Auditor, moreover, who, when transfers of agents at local offices are made, goes over the books of the retiring agent.

The work of auditing freight revenue is at present far more effectively done than it has been done in the past. The auditing department is so subdivided as to secure high efficiency. The primary income accounts, moreover, have been uniformly fixed for all interstate traffic by the Interstate Commerce Commission; yet it is evident that

¹ H. C. Whitehead, pp. 35, 36.

ACCOUNTING OF FREIGHT REVENUE

there is still much diversity both of organization and method. Instead of having a single Auditor of Freight Receipts, large companies variously subdivide the work among different auditors; and fast freight lines sometimes have auditors for freight billed under their charge. The Pennsylvania Railroad, for instance, has auditors of merchandise freight receipts, of coal freight receipts, of miscellaneous receipts and accounts, of the Empire Line and of the Union Line, each of whom is concerned with the auditing of freight revenue. Other auditors are the Auditor of Passenger Receipts and Auditor of Disbursements. To these may be added the Comptroller and Assistant Comptroller, who have charge of the general books and direct the auditors. This subdivision of auditing among several offices is necessary because of the great volume of traffic.

The accounts of different railroads, moreover, may rest on the "received" or "forwarded" bases; the reports required of the local agents vary considerably; statistical computations may be limited or extensive; and the number and form of office records, journals, ledgers, and subledgers vary to a considerable degree.

The most recent mechanical innovation in the auditing of freight revenue has been the introduction of the Hollerith machine. It is similar to that used by the United States Census Bureau. Cards are run through electric machines which record upon the card the date and number of the waybill, station numbers, weight, freight charges, advances, and amounts prepaid. These cards are then passed through tabulating machines and the totals shown on the dials of the machine are compared with those shown in the agent's daily received reports. They are then sorted by dates and stations and those for each station of the same date are separately passed through the tabulating

THE FREIGHT SERVICE

machine. The totals shown on the dials are this time compared with those of the daily forwarded reports and all discrepancies adjusted. In this way the accounts for each day and month can be proved. The machine system has been adopted by various companies, among which are the New York Central, the Long Island Railroad, and the Pennsylvania Railroad for its local accounts.

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CHAPTER VIII

CAR SERVICE AND EFFICIENCY

I. GENERAL FACTORS

Statistics of railway equipment—Eight causes accounting for car shortage—The carrier's problem of car surplusage—References.

IN 1908 the combined freight equipment of all railways in the United States consisted of 2,172,696 freight cars (not including private cars), 33,935 freight locomotives, and 8,837 switching engines. In 1908 there were transported 869,795,510 tons of freight. During the years from 1900 to 1908 the number of tons carried increased 49.1 per cent; ton mileage rose 54.2 per cent; and the number of tons carried one mile per mile of line 32.5 per cent. The handling of this rapidly expanding volume of tonnage became one of the most perplexing problems of the traffic and operating departments, and required them to make unusual efforts.

During the period from 1901 to 1908 orders were placed for 1,500,194 new freight cars, or an average of 187,524 per year. The total number of freight cars in use from 1900 to 1908 increased by 53.8 per cent; freight locomotives 56.7 per cent, and switching engines 69.5 per cent. Moreover, the number of tons carried per train increased twenty-five per cent, and it is estimated that the average car load increased nearly twenty-three per cent.

THE FREIGHT SERVICE

The fact that in the years 1906 and 1907 there was serious freight congestion in spite of this expansion in equipment and car capacity suggests that one of the chief difficulties of the transportation department was due not so much to an insufficient number of cars as to the manner of using the equipment. In the years 1900 to 1906 the total freight car mileage increased by over thirty-two per cent, and freight train mileage by 20.6 per cent; and in December, 1908, 69.9 per cent of the car mileage was loaded while 30.1 per cent was empty. The fault was largely in the short mileage made by the cars in use. In 1908 the average miles per car per day, including surplus cars, were 21, and even when surplus cars are excluded the monthly average varied from 23.8 to 25.9 miles. Moreover, owing largely to terminal congestion, this average car mileage does not tend to increase very largely during periods of car shortage.

The problem of car efficiency and shortage arises during times of prosperity. In 1906 the "car famine" became so serious that the Interstate Commerce Commission made an investigation throughout the northwest, southwest, and Pacific Coast. At many points in the northwest a shortage in coal supply was found, and in North Dakota fifty million bushels of grain were being held on the farms or in country elevators because cars could not be secured to move the freight. In the southwest much wheat and cotton remained on the ground at local stations, where it was injured or spoiled. Many lumber mills in the south, and also in Oregon and Washington, ran on short time or were closed down, and in a number of states a similar situation prevailed among the coal mines. Shippers in many other industries, east as well as west and south, were inconvenienced. The shortage was felt most by the producers and

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dealers in the great staples, shippers of freight in small lots being but slightly affected.

Periods of continued car shortage are abnormal and relatively infrequent. The chief shortages in the past have been those of 1887, 1901, and the months immediately subsequent to the anthracite coal strike of 1902. The more recent shortages of the years 1906 and 1907, however, were the most serious ever experienced by American shippers.

Car shortage is usually the result of several causes, all of which are easy to describe, but some of which are difficult to foresee. For the most part they are as follows:

1. A fundamental cause of every car shortage is the unusual increase in freight tonnage for which neither carrier nor shipper is responsible. An increase in actual tonnage (not including freight which was not moved) within half a dozen years of over fifty-three per cent would perhaps have caused trouble in 1906 even under conditions of perfect car performance. Had the carriers, before the increase began, ordered cars which for the time being seemed unnecessary, they would have been accused of wasteful expenditure of funds.

2. The influence of the increased tonnage is, moreover, greatly intensified by the seasonal bunching of traffic during the late summer and in the fall and early winter months. The commercial methods of the grain, cotton, live stock, and coal industries are unfavorable to an easy solution of the car shortage difficulty.

3. A third and very important reason why railway equipment was unequal to the demand in 1906 was the lack of adequate terminal facilities. No other factor so greatly restricted car performance. There was a congestion of hundreds of cars at terminals, switching yards, junction points, and side tracks. It is notable that various railways have

THE FREIGHT SERVICE

recently begun extensive works to meet this pressing need for adequate terminals.

4. The reconsignment privilege frequently stimulates this terminal congestion. Commission men and dealers often order car loads of produce without knowing their final destination, and after permitting them to remain at the terminals for forty-eight hours reconsign them to another point. The abuse of this privilege unnecessarily taxes the already heavily burdened yards and terminals.

5. The inadequacy of motive power has in the past been in part responsible for car shortage. The increase in train mileage and train load constitutes a burden in many cases greater than the available motive power can handle. The frequent reports of engines broken down from overwork convinced many operating officials in 1906 that it was more necessary to increase the number of locomotives than the number of cars.

6. The use of freight cars for warehousing purposes contributes an additional factor. Middlemen and consignees are especially prone to hold cars; indeed, they often prefer to pay demurrage instead of providing warehouse accommodations. In some states the laws permit consignees to hold cars longer than is necessary. The lack of sufficient warehouses and platforms and other terminal facilities for storing unusual amounts of freight compelled the carriers also to be slow in loading and unloading cars. The chief explanation of the low average mileage made by freight cars during periods of unusual demand for cars is to be found in the yard and terminal detention of equipment. No road can handle more freight than can be put through its yards and terminals, no matter how great a number of cars and locomotives it may have.

7. Car stringency may also result from the "diversion

CAR SERVICE AND EFFICIENCY

of foreign cars." The code of rules governing the interchange of cars provides that each carrier shall route foreign cars back to their owners as soon as possible; but when shippers clamor for cars, railways with an insufficient supply have not infrequently used indiscriminately their own cars and those belonging to other roads. The railways of the middle West which originate a large tonnage that is turned over to connecting roads, are conspicuous losers, while those of New England, the Pacific Coast and the Southwest are gainers. It was found by the Interstate Commerce Commission that "car appropriation between carriers does not seem to be regarded as dishonorable nor even looked upon with great disfavor." Some railway officials, however, denounce lines resorting to this practice as "car thieves." Its influence is not upon car performance, but upon the supply of cars available on different railways. It unjustly accentuates the shortage on certain lines, and alleviates it somewhat on others; the carriers and shippers of one section are obliged to suffer unjustly for the benefit of those in another part of the country.

8. A similar injustice is caused by the unfair distribution of cars among shippers. Many eastern coal companies, in which the carriers or their officials were interested, had private cars to supply a part of their needs, but such companies were given as great a share of the railroad's equipment as would have been allowed them had they owned no private cars. The consequence, in some instances, was a serious discrimination against coal companies that had no private cars. The granting of undue preference to favored shippers in car distribution was practiced by the carriers in connection with many other industries, and was largely responsible for the passage of

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the numerous car service statutes that were enacted from 1902 to 1907. In some instances the preferences granted in car distribution favored the competitive at the expense of the noncompetitive points. The distress among the grain shippers of the Northwest and Southwest, for instance, was more acute at noncompetitive than at competitive points; and, while many of the southwestern noncompetitive local cotton shipping points suffered a car famine, some of the competitive cities had a fair supply throughout the season.

Besides these more general causes of car shortage there are various miscellaneous practices, some of which are applicable only to individual carriers. Various railway companies in 1906 were accused of unnecessary delay in unloading company material; some showed unfair preference to those classes of freight calling for a long haul; and others unduly subordinated time of transportation to tonnage. Low minimum car-load weights were in some instances a factor, for unless these minima are raised proportionately to the increase in car capacity the use of larger cars is less effective than it might be. The small shipper is opposed to any attempt to raise the minimum car load, because it favors the large shipper by virtually raising the freight rates paid by those who ship small quantities. At times the practice of "over-shipments," or the making of shipments faster than the consignee can unload, to obtain current low rates or for other reasons, has resulted in thousands of cars being held *en route*. Lastly, there has been complaint in times of car shortage that the work of the car record office is not as yet developed to an efficient stage. Cars too frequently become "lost," and the knowledge of the car record office as to their whereabouts is incomplete.

CAR SERVICE AND EFFICIENCY

From the standpoint of the shipper, the problem of car efficiency is of particular interest only at times of car shortage. The carrier, however, is frequently confronted by the opposite condition of a car surplus. With every industrial setback, the car shortage is rapidly converted into a surplus of equal or greater magnitude. On January 6, 1907, for instance, there was a shortage of 150,000 cars; in the fall it began to dwindle, and by December 24, 1907, there was a surplus of 209,310 idle freight cars, standing on the side tracks, and in the terminals and yards, depreciating in value, a financial burden to the companies. By April 29, 1908, the surplus had reached a total of 413,605. Even during the crop-moving season at the end of October, 1908, it amounted to 110,912 cars, and by January 20th during the winter season it had again risen to 311,664. The surplus then gradually declined until on March 16, 1910, it amounted to but 45,513 cars; on May 25, 1910, however, the surplus aggregated 115,390.

The continuous existence of a car surplus during such a long period is exceptional, but even in normal years there are seasonal surpluses. The carriers are under pressure to furnish cars of sufficient number and capacity to carry all freight offered during the busy season. The farmer and cotton planter insist upon selling their crop immediately after it is harvested; the coal dealer frequently refuses to order his coal until the late fall and early winter months, and the live-stock man ships most of his cattle in the fall. Thus in the spring and early summer there is a dull season and the demand for cars wanes. As a result of the way business is conducted, a car shortage is probable during the busy season, while in the dull season there is frequently a surplus. The surpluses are of no interest to the shipping public, but cannot be wholly disregarded

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by the companies when placing their orders for additional equipment.

It is evident from the foregoing analysis of the problem of car supply that it is to the interest alike of the public and the carriers that business methods should, in so far as possible, be so organized as to minimize the variations in the seasonal demands for freight cars; it is also clear that economy and efficiency in the freight service are largely dependent upon the success which the carriers may have in solving the difficulties to be overcome in connection with car service. It is generally admitted that there is still large opportunity for increasing the efficiency of freight equipment.

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CHAPTER IX

CAR SERVICE AND EFFICIENCY

II. CAR DISTRIBUTION AND CAR RECORDS

The work of the car distributor—Distribution of cars by chief dispatcher and station agents—Legal obligations of carriers in car distribution—Work of the car record office—Reports made to car record office—References.

I. CAR DISTRIBUTION

THE distribution of freight cars among the shippers is problem number one in car service and efficiency. In a large railway system, all divisions of which are dependent upon a common source for their supply of cars, this work becomes highly complex. It requires careful organization and the attention of intelligent and expert officials.

The apportionment of the equipment among the various train districts, or divisions, comes first. This work is frequently in charge of a Car Distributor, who obtains the detailed daily information which it is necessary that he should have from the Chief Dispatchers of the various operating districts, who in turn compile it from telegraphic reports made by the agents at the various stations.

It is the duty of the Car Distributor not only to supply cars upon demand, but also to study the means of reducing empty car mileage and of decreasing waste in the use of cars. He must also seek to anticipate future demands for cars and take steps to meet probable requirements. Know-

CAR DISTRIBUTION AND CAR RECORDS

ing what kinds of commodities are shipped over his lines in different seasons of the year, he will gradually transfer the cars from one division to another, so as to be able to meet varying demands. Likewise, he will keep informed as to crop prospects, the price of commodities and market conditions, in order that he may measure the forthcoming needs of the several sections of country served by his lines. Especially must he endeavor to have his company's cars returned from foreign roads when the demand for equipment is heavy; and he must not allow the cars to linger unnecessarily long in the repair shops.

The distribution of cars among the individual shippers and stations is in the immediate control of the Chief Dispatcher and the station agents. Shippers are obliged to order the cars through the station agents, and are by them furnished with prescribed forms. These forms are arranged to indicate the number and kind of cars desired, the date when wanted, the kind of products to be shipped, and the destination and route of the shipment. With these orders before him, the agent each day requests the desired cars from the Chief Dispatcher of his train district or division. If sufficient cars are available the full quota will be sent; otherwise a division must be made among the shippers. In case of inadequate supply, the Chief Dispatcher may appeal to the Superintendent of Transportation, who may, if he thinks best, order the Car Distributor to transfer cars from other divisions.

The practices of car distributions during periods when there are not enough cars to fill all orders are regulated by law. In those states where reciprocal demurrage laws prevail (see Chapter XI) the requirements in the case of interstate traffic are peculiar. Aside from these instances the usual practice of the states is to require "fair and

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reasonable distribution," and frequently its supervision is placed in the hands of the state railway commissions. The distribution of cars is also under the regulative control of the Interstate Commerce Commission. In case of car shortage the carriers are required by law fairly to distribute available cars. The penalty is not against inability to furnish cars, but against unjust discrimination among shippers.

The commission has ruled that if cars are available the carrier must furnish them upon "reasonable request." In case of shortage, all that may be expected is that the requirements of the shippers shall be fairly ascertained and the available cars justly distributed.¹ The shipper cannot collect damages in time of shortage unless he can show unfair discrimination.

In the distribution of cars among coal mines the courts² have supported the orders of the Interstate Commerce Commission that the private or "individual" cars of the company owning a mine shall be considered a part of the quota to which it is entitled. In times of shortage, the mine is entitled to the exclusive use of its cars, but it then receives a proportionately smaller quota of whatever railway cars may be available. It has, likewise, been held that this same rule applies in the distribution of both home and foreign coal cars consigned for the carriage of coal as railway fuel.

No definite basis for the apportionment of available

¹ *Traer vs. C. & A. R. R. Co.*, XIII I. C. C. Repts. 451, 1908; U. S. *vs. Norfolk*, 109 Fed. Rept. 831.

² U. S. *ex rel. Pitcairn Coal Co. vs. B. & O. R. R. Co. et al.*, 154 Fed. Rept. 108 (1907), 165 Fed. Rept. 113 (1908), 215 U. S. Rept. 481 (1910). *Logan Coal Co. vs. Penna. R. R. Co.*, 154 Fed. Rept. 497 (1907); *I. C. C. (appellant) vs. Ill. Cent. R. R. Co.*, 215 U. S. Rept. 452 (1910).

CAR DISTRIBUTION AND CAR RECORDS

coal cars among mines has been laid down. The physical capacity of the mines is the basis most commonly adopted, and while the Interstate Commerce Commission does not approve of this, it has not as yet offered a substitute. It has recently confirmed for the present the use of "commercial capacity" for fast shipments as an element in mine rating. The courts¹ have held that it is not unlawful for a carrier to compute the percentages of cars he assigns to the various mines, both by averaging the actual shipments from each mine during the season when there was no shortage, and by considering the physical capacity of such mines, counting the tonnage shipped as two units and the capacity as one in fixing the percentages.

II. THE WORK OF THE CAR RECORD OFFICE

The greater need for statistics in railway operation, the substitution of the per diem for the mileage system of payment for foreign cars, and the increase in equipment and traffic, have in recent years greatly augmented the functions of the car record office.

The official in charge is known as the Car Accountant, although the car record office usually is not a part of the Accounting Department, but is a branch of the Transportation Department. Its chief accountant is responsible to the General Superintendent.

There are two general methods of keeping car records on American railways. The first is the card index system, and the second, which is more widely used by the larger carriers, is the loose-leaf ledger system.

The work of the office is divided mainly between two branches, the Mileage Department and the Record Depart-

¹ U. S. *ex rel.* Pitcairn Coal Co. *vs.* B. & O. R. R. Co. *et al.*, 154 Fed. Rept. 108 (1907); 215 U. S. Rept. 481 (1910.)

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ment. The work of the former is limited to the keeping of mileage records of private freight cars and passenger cars. Prior to the adoption, in 1902, of the per diem system of paying for the use of "foreign" freight cars, its work was more extensive. It now computes the mileage of the private freight cars and of passenger cars, and the amounts due on them, and at the end of each month makes a report to all the carriers interested, so that they may make the required settlement among themselves.

The computations are made from the *daily reports of train conductors* (Form 1), showing the points from which and to which the cars were moved. The conductors are supplied with prescribed forms which enable them to indicate clearly the initials and number of each car, whether it is loaded or empty, and the point "where from" and "where to" it was carried. Abbreviations and numbers are used in reporting the various sidings and stations. Junction points and terminals are designated by letters, and stations on the road are numbered consecutively with numbers indicating their respective distances from the initial station. In this way, the work of the mileage department is greatly simplified.

The work of the record department is far more complicated and difficult than that of the mileage department. Its chief function is to keep a record of the daily movement and exact location of each freight car (other than private cars), so that lost cars may be readily traced; that any department interested may easily ascertain the whereabouts of any particular car; that errors in the interchange of foreign cars may be minimized, and that the transportation department may exercise a more effective control over equipment.

Two sets of records are kept: one recording the move-

THE BALTIMORE AND OHIO RAILROAD CO.

FREIGHT TRAIN

Division _____

No. _____

From _____

To _____

Date _____ 19____
(LAST REPORT MAY BE LUMPED)

Received this report of _____
to be forwarded on train No. _____
_____ *Agent or V. M.*

RELEASE.

FOR USE OF SUPT. OF CAR SERVICE OFFICE ONLY.

CLASS	LOADED	EMPTY	LOADED	EMPTY	LOADED	EMPTY	LOADED	EMPTY
Box								
Boxb								
Boxb'y								
Flat								
W. Genl.								
B. Genl.								
W. Spec.								
B. Spec.								
O. Chem.								
C. Boxb.								
Powder								
Coal								
Exp.								
Crab.								
Coal								

BACK OF FORM 1.

CAR DISTRIBUTION AND CAR RECORDS

ment and location of "home" cars, and the other of "foreign" cars. In the case of home cars, the information furnished by the conductors' car reports is transferred to the card in the index or the portion of a page in the ledger which is given over to the particular car in question.

Because of the greater importance of the ledger system it may be well to examine it somewhat further. Each leaf is so ruled as to facilitate the work of the office. In the usual car record book, the car numbers run down the left side of each page, the days of the month run horizontally across the top, center and bottom, and on the right side are two columns indicating the empty and loaded car mileage. Each day the numbers or abbreviations of the station where from and where to the car moved are entered under the proper date, and constitute the means of tracing the car and ascertaining its location. The books used for cars which do not make many movements differ from those ordinarily used in that the printed dates are omitted, the date being entered by the clerk whenever a movement is made.

The keeping of Foreign Car Records involves the additional task of indicating the ownership of each car and of computing the amount of "per diem" which the companies owe to each other. At the time when a "cut of cars" is delivered to a connecting road a so-called "*interchange*" slip (Form 2) is made out, indicating the initials and numbers of the cars, the kind of cars, whether loaded or empty, the road to which they passed, the time when and station at which the interchange was made, the engine used, and the employee in charge. It is signed by the proper agent of both carriers, and one copy is preserved by each as evidence in case accuracy should be subsequently disputed.

THE FREIGHT SERVICE

The papers sent to the Car Accountant by the agents are the *daily interchange reports*. The old practice still

INTERCHANGE SLIP FOR CARS DELIVERED BY
North & South Railroad

To.....R.....

At.....M..... Engine No.....
(Give date, A.M. or P.M.)

.....
.....

..... Station.....

..... 190.....

I loaded, or Unloded.....

INITIALS	PL	NUMBER	X	DATE
				1
				2
				3
				4
				5
				6
				7
				8
				9
				10
				11
				12
				13
				14
				15
				16
				17
				18
				19
				20
				21
				22
				23
				24
				25

Certified correct:.....

..... N. & S. R.R.

Certified correct:.....

.....

INSTRUCTIONS

COVERING USE OF THIS SLIP.

One report and its carbon copy to be made for each car of cars delivered to a connecting road.

Deliveries to different lines not to be included on same slip.

The report and its copy to be made before leaving the yards of this Company, and signed by its proper representative, bearing witness the time of delivery, which will be filled in on reaching the delivery tracks of the connecting road, and the signature of the representative authorized to sign for that road obtained to the duplicate slip, one of which will be left with the connecting road, and the other returned to the Agent of N. & S. R.R.

Show whether cars are Loaded or Unloded, using X for loaded and - for empty.

These slips must be preserved for production as evidence if necessary should be subsequently disputed.

FORM 2.

retained by some lines makes use of two distinct forms, the one being a report of cars *delivered to* and the other of cars *received from* a foreign road. Daily at midnight these

CAR DISTRIBUTION AND CAR RECORDS

reports close, and contain a complete statement, for the day, of all cars interchanged, their initials, number and kind, whether loaded or empty, and the point of shipment, final destination, contents, and the hour at which they were received or delivered. After being signed by the agents of both lines each files a copy in his office, and each sends a copy to his respective Car Accountant.

On most lines a new practice as to interchange reports has been adopted. Instead of having two separate

[illegible]

FORM 3.

forms, the two are combined into one which contains all the above stated information for all cars transferred *from one named railroad to another named railroad* (Form 3) at a stated interchange point, and copies of one and the same paper are used by the agent and Car Accountant of both roads.

THE FREIGHT SERVICE

Upon receipt of these interchange reports at the car record office, they are recorded, and as soon as possible the Car Accountant sends a *junction report* (Form 4) to the Car Accountant of the company owning the car, indicating

North & South Railroad.

Junction Report of Cars Delivered to Our Connections.

On.....190....

(Printed Signature)

(Title of Observer)

X Loaded. = Empty

[illegible]

4- NOTE.—Standard size, 8½ x 8½ inches, including margins.

FORM 4.

which of its cars were that day interchanged, and to what line they were delivered.

The foregoing papers constitute a daily record, upon the basis of which per diem can be computed. A complete report of this, known as the *per diem report* (Form 5), is made to all owners "within thirty days after the end of each calendar month, showing the number of days

each car has been in service upon the road making the report," and the amount due.

Study Name:

Case of _____ R. _____ Month of _____ 190____

[illegible]

For a free report, call 1-800-451-4243

Column Two	Column One
1	2
3	4
5	6
7	8
9	10
11	12
13	14
15	16
17	18
19	20
21	22
23	24
25	26
27	28
29	30
31	32
33	34
35	36
37	38
39	40
41	42
43	44
45	46
47	48
49	50
51	52
53	54
55	56
57	58
59	60
61	62
63	64
65	66
67	68
69	70
71	72
73	74
75	76
77	78
79	80
81	82
83	84
85	86
87	88
89	90
91	92
93	94
95	96
97	98
99	100

SUMMARY.

Per Stem _____ days at 25 cents per day, @ _____

199

Page 2 of 2

KEY WORDS: *Chlamydia trachomatis*; *Neisseria meningitidis*; *Neisseria gonorrhoeae*; *Haemophilus influenzae*; *Streptococcus pneumoniae*

FORM 5.

These are the principal papers used in keeping the record of foreign cars. Others of less importance may be mentioned without giving a description of each. A special form is used to make corrections of errors in junction

THE FREIGHT SERVICE

reports, another to supply missing junction reports, and one to make corrections or supply omissions in per diem reports. There is a special form which is used in giving notice to a road that certain cars are to be returned without delay; and there is another, known as the *per diem reclaim statement*, which is used once each month in the settlement of reclaims due for switching service.

REFERENCES

1. F. K. Lane, "Car Distribution and Car Shortage," in *Railway World*, vol. lii, pp. 876-878, October 16, 1908. (Mr. Lane is a member of the Interstate Commerce Commission.)

2. Rogers & Co. *vs.* Philadelphia & Reading Railway Co., XII I. C. C. Reps., 308, 1907; Railroad Commission of Ohio *et al. vs.* Hocking Valley Railway Co., XII I. C. C. Reps., 398, 1907; Traer *vs.* Chicago & Alton Railroad Co., XIII I. C. C. Reps., 451, 1908; U. S. *vs.* Norfolk & Western Railway Co., 109 Fed. Rep., 831, 1901; Macmurray *vs.* Union Pacific Railroad Co., XIII I. C. C. Reps., 531, 1908; U. S. *ex rel.* Pitcairn Coal Co. *vs.* B. & O. Railroad Co., 154 Fed. Rep., 108, 1907, 165 Fed. Rep., 113, 1908, 215 U. S. Rept. 481, 1910; Logan Coal Co. *vs.* Penna. Railroad Co., 154 Fed. Rep., 497, 1907; I. C. C. (appellant) *vs.* Illinois Central Railroad Co., 215 U. S. Rept. 452, 1910.

3. F. H. Graser, "Utility of the Car Service Association," in *Railway World*, vol. li, pp. 163-164, February 22, 1907.

4. L. C. Bihler, "Ways and Means to Maintain Car Supply," in *Railway World*, vol. l, p. 673, Aug. 10, 1906. *Railroad Gazette*, vol. xli, p. 331, October 19, 1906.

CHAPTER X

CAR SERVICE AND EFFICIENCY

III. RULES CONCERNING CAR SERVICE, PER DIEM, AND INTERCHANGE OF CARS

Three codes governing use of foreign cars—American Railway Association's Code of Car Service Rules—Code of Per Diem Rules—Code of Rules of the Master Car Builders Association—The American Railway Clearing House—Car pools—References.

THE formulation and enforcement of rules controlling the interchange of cars among carriers and the payment for the use of foreign cars has proven a difficult task. It has long been the practice of railways to permit car-load freight to be shipped through from consignor to consignee, without transshipment. The Interstate Commerce Act also requires railways to furnish through rates and routing, but it is only under exceptional conditions that any railway company needs the compulsion of law to enter into interline arrangements for the through shipment of car-load freight. Every railroad must interchange equipment with its connections and must observe the car service and per diem rules that have been adopted by the common action of the carriers.

The use of "foreign" cars is at present controlled by three codes: The "Code of Car Service Rules" of the American Railway Association; the "Code of Per Diem Rules," and the "Master Car Builders Rules" governing

THE FREIGHT SERVICE

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The use of "foreign" cars is at present controlled by three codes: the "Code of Car Service Rules" of the American Railway Association; the "Code of Per Diem Rules" of the Master Car Builders Association; the "Code of Rules" of the American Railway Clearing House.

THE FREIGHT SERVICE

Upon receipt of these interchange reports at the car record office, they are recorded, and as soon as possible the Car Accountant sends a *junction report* (Form 4) to the Car Accountant of the company owning the car, indicating

North & South Railroad.

Junction Report of Cars Delivered to Our Connections.

On 190 (Printed Signature)

Printed Signature _____

Date of Offer:

X Loaded. = Empty

Case Study

[illegible]

6-4 NOTE.—Standard size, 8 1/2 x 11 inches, including margins.

FORM 4.

which of its cars were that day interchanged, and to what line they were delivered.

The foregoing papers constitute a daily record, upon the basis of which per diem can be computed. A complete report of this, known as the *per diem report* (Form 5), is made to all owners "within thirty days after the end of each calendar month, showing the number of days

each car has been in service upon the road making the report," and the amount due.

Short No. _____

Case of _____ R. _____ Month of _____ 190____

[illegible]

FORM 5.

These are the principal papers used in keeping the record of foreign cars. Others of less importance may be mentioned without giving a description of each. A special form is used to make corrections of errors in junction

THE FREIGHT SERVICE

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1. F. K. Lane, "Car Distribution and Car Shortage," in *Railway World*, vol. lii, pp. 876-878, October 16, 1908. (Mr. Lane is a member of the Interstate Commerce Commission.)

2. Rogers & Co. *vs.* Philadelphia & Reading Railway Co., XII I. C. C. Reps., 308, 1907; Railroad Commission of Ohio *et al. vs.* Hocking Valley Railway Co., XII I. C. C. Reps., 398, 1907; Traer *vs.* Chicago & Alton Railroad Co., XIII I. C. C. Reps., 451, 1908; U. S. *vs.* Norfolk & Western Railway Co., 109 Fed. Rep., 831, 1901; Macmurray *vs.* Union Pacific Railroad Co., XIII I. C. C. Reps., 531, 1908; U. S. *ex rel.* Pitcairn Coal Co. *vs.* B. & O. Railroad Co., 154 Fed. Rep., 108, 1907, 165 Fed. Rep., 113, 1908, 215 U. S. Rept. 481, 1910; Logan Coal Co. *vs.* Penna. Railroad Co., 154 Fed. Rep., 497, 1907; I. C. C. (appellant) *vs.* Illinois Central Railroad Co., 215 U. S. Rept. 452, 1910.

3. F. H. Graser, "Utility of the Car Service Association," in *Railway World*, vol. li, pp. 163-164, February 22, 1907.

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THE formulation and enforcement of rules controlling the interchange of cars among carriers and the payment for the use of foreign cars has proven a difficult task. It has long been the practice of railways to permit car-load freight to be shipped through from consignor to consignee, without transshipment. The Interstate Commerce Act also requires railways to furnish through rates and routing, but it is only under exceptional conditions that any railway company needs the compulsion of law to enter into interline arrangements for the through shipment of car-load freight. Every railroad must interchange equipment with its connections and must observe the car service and per diem rules that have been adopted by the common action of the carriers.

The use of "foreign" cars is at present controlled by three codes: The "Code of Car Service Rules" of the American Railway Association; the "Code of Per Diem Rules," and the "Master Car Builders Rules" governing

THE FREIGHT SERVICE

the interchange of freight cars. These three codes will be considered in turn.

1. The Code of Car Service Rules was first adopted by the American Railway Association in October, 1900, and has since been amended seven times. It is not an agreement among the members of the association, but merely a code recommended by the association to its members. It has, however, been adopted by practically all the leading American railways acting individually; but since it is not a contract, it is more or less frequently disregarded in periods of car shortage. This is, however, but one of many evidences of the fact that the railways in the United States have not yet so developed associated action as to regulate effectively and harmoniously all matters of common interest. Progress is being made, and this is notably true as regards car service and interchange of equipment.

The chief provisions of the code with reference to freight cars are those regulating the return of foreign cars to their owner. Rule 1 provides that "foreign cars must be promptly returned to their owners," and Rules 2, 3, and 4 prescribe the manner in which this is to be done.¹ The code is generally observed when traffic is moderately heavy,

¹ 2. (a) Loaded (via any route) so that the home road will participate in the freight rate; (b) Loaded to the road from which originally received, if such loading is in the direction of the home road, but not otherwise; (c) Loaded to an intermediate road in the direction of the home road; (d) Loaded in local service in the direction of any junction point with the home road; (e) Cars may be loaded locally in an opposite direction from the home road or home route if to be loaded according to Rule 2-a, b, or c.

3. (a) Empty cars belonging to a system having a direct connection must, subject to 3-b, be delivered to such connection regardless of whence they came; (b) The car owner shall have the right to demand the return of his empty cars at the

RULES CONCERNING CAR SERVICE

but is often evaded when each road needs to have possession of all its equipment.

2. Separate and distinct from the car service rules is the Code of Per Diem Rules. A signed agreement between the subscribing railways binds them to the terms governing settlement for the use of foreign cars as stated in the code. A notice of three months must be given before any member may withdraw from this agreement. Formerly, the payment for the use of foreign cars was made on a mileage basis, but under this method cars could be side-tracked or used for storage purposes without obliging the holding road to pay for their use or detention. As a result, the present per diem principle was substituted on July 1, 1902. Inadequate though it has been in times of car shortage, car performance has been improved and cars have been returned more promptly than prior to its adoption.

At various times the rate of per diem has been changed. The original charge was twenty cents per car per day. On

junction point where delivered loaded; (c) Empty cars may be sent in an opposite direction from the home road or home route if to be loaded according to Rule 2-a, b, or c; (d) Empty cars may be delivered to connecting road, switching or otherwise, to be loaded in accordance with Rule 2-a, b, or c, but not otherwise; (e) When necessary to return cars empty belonging to roads other than direct connections, they may be delivered to the road from which received; (f) When it is desired to short-route an empty foreign car home the car may, with the consent of the owner, and the roads over which the car must move be short-routed at a reciprocal rate of $2\frac{1}{2}$ cents per mile, plus bridge and terminal arbitraries, with a minimum of 100 miles for each road handling the car; charges and per diem to be paid by the road requesting the movement.

4. Cars received loaded in switching service must be confined to switching territory, and when made empty must be returned to the owner, if a direct connection within that territory, or otherwise to the road from which received, or may be loaded in accordance with Rule 2-a, b, or c.

THE FREIGHT SERVICE

October 26, 1905, this per diem charge was raised to twenty-five cents, while the penalty or extra per diem, payable after thirty days, was reduced to seventy-five cents. In the summer of 1906, even this proved wholly insufficient to prevent carriers from detaining foreign cars, and a new agreement providing temporarily for a fifty-cent-per-diem charge was signed by about two thirds of the roads on November 9th and became operative on December 1st. The penalty clause was abandoned, because it had proved ineffective, owing to the practice of "breaking penalty" by transferring cars to subsidiary roads. In 1908 the rate was again reduced to twenty-five cents because the car shortage problem no longer existed, and several New England railways which habitually received more loaded cars from beyond the Hudson than they return, served notice of withdrawal from the existing agreement. In 1910 a rate varying from thirty to thirty-five cents in different seasons of the year was adopted.

The Code of Per Diem Rules, as enforced in 1910, contains seventeen different clauses. Besides Rule No. 1, providing for a thirty-cent-per-diem charge for March, April, May, June, and July, and thirty-five cents for the remaining seven months, the chief provisions are contained in Rules 3, 5, 15, and 17. Rule No. 3 provides that a road shall have the right to demand the return of its cars in accordance with Rules 1, 2, 3, or 4, of the Code of Car Service Rules above mentioned. Rule 5 provides that "an arbitrary amount for each car in switching service may be reclaimed by the switching line from the road for which the service was performed." Rule 15 permits one carrier to institute an "embargo" against any specified traffic offered by a connection, but stipulates that it must receive cars already loaded with such traffic at the time the

RULES CONCERNING CAR SERVICE

notice is served and also cars loaded within twenty-four hours thereafter. The final rule establishes an arbitration committee of five members whose duty it is to interpret the rules of the agreement and settle all disputes arising under them. The expenses are first paid by the American Railway Association, but are then billed to the parties concerned in the dispute.

This per diem code has been subscribed to by practically all the large railway companies of the United States and Canada. Modifications of the general code are now made by but a small number of its subscribers, the chief of which are the Boston & Maine, Maine Central, and Central New England. As long as the roads subscribing to the agreement are burdened with a surplus of cars its provisions are effective. Its great weakness lies in that a per diem charge of thirty cents, or even of fifty cents, does not prevent car diversion when the home road most needs its cars.

The per diem charge is in the nature of a penalty—it aims to induce the return of cars to their owners. It is not regarded as a recompense to the owner for the revenue which the car would earn if it were at home; it barely covers the interest on the capital invested in the car. Consequently when in times of dense traffic a car can earn six dollars or more per day, many carriers are quite willing to pay the per diem and “confiscate” the cars. Moreover, to increase the charge greatly is a delicate procedure. With the present low per diem, railway companies sometimes accuse one another of not building a fair share of cars; yet many roads would doubtless refuse to subscribe to a code providing a heavy charge, and fear has been expressed that it would seriously interfere with through shipments.

Aside from promulgating the Code of Car Service

THE FREIGHT SERVICE

Rules, and the Code of Per Diem Rules,¹ the American Railway Association is influential in various other ways.

RETURN CARD.	
—	
..... Car No.	
from	Ry.,
to	Ry.,
for the following defects	
.....	
.....	
.....	
.....	
.....	
Inspector.	

FORM 1.

It has a standing "Committee on Relations between Railroads," which devotes its attention particularly to ways

<p style="font-size: small; margin: 0;">NOTE.—Fill in defects on both sides with ink or black indelible pencil. Attach this card with four tacks on outside face of intermediate sill between cross-tie timbers.</p>	M. C. B. DEFECT CARD.		
	(Name of Road.)		
	Date		
	Car specified below will be received at any point on this company's line with the following defects		
		
		
.....		Car No.	Initials
		Inspector at	

FORM 2.

and means of improving car efficiency, and makes recommendations to the association. It gathers most valuable

¹ The agreement of November 9, 1906, was arranged by the individual carriers.

[illegible]

Car No.	Initial } or Name }	Kind
.....

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RULES CONCERNING CAR SERVICE

data as to car supply, shortage, surplus, performance, and similar matters. These statistics will be of importance in future revisions of the per diem and car service rules. The American Railway Association also considers the recommendations made to it by the Association of Transportation and Car Accounting Officers, Master Car Builders Association and other railroad associations.

3. The Code of Rules of the Master Car Builders Association, as revised in June, 1908, governs the practices of railways as to the maintenance and repairs of foreign cars, and among the 136 rules of the code may be found the provisions that each road shall give the same care to foreign cars that it does to its own, that each is responsible for damages done by unfair usage, accident or improper repairs, and that cars must be accepted if in safe and serviceable condition when offered by a connecting road. Provision is made for the posting of *return cards*

FROM
..... R. R.
TO
..... R. R.
VIA
.....
.....
Car No. Initials
to be shopped for.
.....
.....
.....
(Head of Car Department.)

FORM 4.

(Form 1), giving reasons for the rejection of any car; of *defect cards* (Form 2), stating all defects at the time the car is received; *repair cards* (Form 3) in

THE FREIGHT SERVICE

three parts, enumerating the repairs made by the foreign road: one for the party making the repairs, one to be attached to the bill, and a third to be tacked to the car; and *home cards* (Form 4) which shall be attached to worn-out and damaged cars in case their owner elects to have them returned. Detailed provision is also made, and forms provided (Forms 5 and 6), as to the exact charges allowable when repairs are made to a foreign car. Over 500 railway companies and car owners have thus far adopted the Master Car Builders Code of Rules.

The most recent innovation in the matter of interchange of cars was introduced in January, 1907, when, through the medium of the committee on car efficiency of the American

[illegible]

FORM 5.

Railway Association, the American Railway Clearing House was formed. Its objects are fivefold—to clear car accounts between railroads subscribing to the arrangement; to keep records of the interchange of cars for the benefit of car owners; to arrange for an equal interchange of cars under the per diem system between lines desiring to adopt

RAILWAY CO.

BY

BOYDING—199..

-129..

[illegible]

Form 6.

RULES CONCERNING CAR SERVICE

such a plan; to arrange for the pooling of cars between roads desiring to contribute a portion of their equipment to such a pool; and, in a general way, to promote the efficiency of cars.

The chief work the Clearing House has thus far accomplished is in the clearing of car accounts. It now handles the per diem and mileage settlements for eighty-five railway and car companies, the largest of which are the Harriman Lines—the Union Pacific, Southern Pacific, Oregon Short Line, Oregon Railroad & Navigation Company, Central Pacific—the Delaware & Hudson Lines; Baltimore & Ohio; Chicago & Alton; Chicago, Rock Island & Pacific; Iowa Central; Kansas City Southern; Norfolk & Western; and the Wheeling & Lake Erie.

Though the Clearing House has not thus far succeeded in forming a car pool, the fact that the pooling idea is being seriously considered by numerous practical railroad officials, and that a definite attempt has been made, is significant. The plans urged include three limited car pools, each with separate membership, a box car pool, gondola car pool, and a coal car pool. Under the proposed plan the cars contributed by the members of the agreement would have the nature of "legal tender" currency—they would be used indiscriminately by the members and each company's daily quota of cars would be maintained from the common supply.

The establishment of one or more car pools, each including all the railways in the United States in its membership would be a most difficult task, although a logical step to take. As great railroad systems have severally grown up each has developed a company car pool of large proportions. The Harriman Lines, the Vanderbilt Roads, the Pennsylvania System, the Southern Railway, each as-

THE FREIGHT SERVICE

signs a certain part of its cars for use in through traffic; and, as a matter of fact, each great system pools its entire equipment. Thus, cars under a single management are operated over lines 1,000 to 2,500 miles long, forming parts of a system including 10,000 to 30,000 miles of line, and serving more or less exclusively large sections of the country.

The amalgamation of the company pools into one or more huge country-wide pools is considered by many to be a possibility to be realized in the early future. If this can be done, it will no doubt increase the efficiency of railway equipment, reduce the costs of transportation, and enable the carriers to give the public a better service in times of heaviest traffic; but the difficulties to be overcome in bringing all the freight cars owned by the railways in the United States under a single management seem at present insuperable.

REFERENCES

1. *Official Railway Equipment Register*, published monthly by the Railway Equipment and Publication Co. at 24 Park Place, New York.

2. "Official Per Diem Bulletin," published monthly in the *Official Railway Equipment Register*.

3. Proceedings of the American Railway Association, vols. i to v. (The Code of Per Diem Rules as amended from time to time may be found in the Proceedings.)

4. J. R. Cavanagh, "The Pooling of Freight Cars," in *Annals of the American Academy of Political and Social Science*, vol. xxix, pp. 260-265, March, 1907.

5. E. R. Dewsnap, editor "Railway Organization and Working," chapter on "Per Diem and Car Service Rules: Their Meaning and Application," pp. 463-487.

6. J. W. Midgley, "Car Clearing Houses and Car Pools—Benefits from their Establishment," in *Railway Age*, xli, 892-893, June 1, 1906; "Car Pooling—Need of Remedy of Unfair

RULES CONCERNING CAR SERVICE

Diversion of Foreign Cars," *ibid.*, 1232-1234, June 22, 1906; "Weak Points in the Car Service Rules and the Per Diem Code," *ibid.*, xlii, 85-87, July 20, 1906; "Remedies for Diversion of Freight Cars," *ibid.*, 180-182, August 10, 1906; "An Equipment Company Most Probable—Remedies for Misuse of Freight Cars," *ibid.*, 414-416, October 5, 1906; "Necessity of Increasing the Efficiency of Railway Equipment," in *Railway World*, li, 479-481, June 7, 1907; "Results Obtained by the Railway Clearing House Bureau," *ibid.*, lii, 150-152, February 21, 1908.

7. "The American Railway Clearing House and Car Pools," in *Railroad Gazette*, xlii, 98, January 25, 1907.^a

8. "Proposed Rules to Prevent Diversion of Cars," *ibid.*, 845-846, June 14, 1907.

9. "Car Hire Agreement," *ibid.*, xli, 431, November 16, 1906; also in *Railway Age*, xlii, 604-605, 607, November 16, 1906.

10. A. Hale, "Progress Toward Car Efficiency," in *Railroad Age Gazette*, xlv, 999-1001, September 25, 1908.

CHAPTER XI

CAR SERVICE AND EFFICIENCY

IV. DEMURRAGE AND RECIPROCAL DEMURRAGE

“Free time” and demurrage charges—“Twenty-four-hour average contracts”—State demurrage laws—The National Car Demurrage Rules—Track storage charges—Work of car service associations, map and forms—Demurrage and reciprocal demurrage laws—References.

I. DEMURRAGE

A PROMINENT factor affecting car efficiency is the detention of freight cars by shippers and consignees. As stated in a previous connection, one of the causes of car shortage, even in spite of all the precautions taken by the carriers, is the time consumed in loading and unloading cars. To prevent undue detention, the carriers commonly impose a so-called demurrage or car service charge.

The usual practice of all the bureaus having charge of car service is to grant a “free time” of forty-eight hours, and thereafter charge demurrage at the rate of \$1 per car per day. The general rule as to storage on less than car-load lots in the West and South is five cents per ton, or fraction thereof, per day, after forty-eight hours. East of the Mississippi and north of the Ohio it is generally arranged by the traffic department and the rates are numerous and variable. On cars placed between 7 A.M. and 12 noon, free time usually does not begin until 7 A.M. of the day following, and on cars placed between 12 noon

DEMURRAGE AND RECIPROCAL DEMURRAGE

and 7 A.M. it does not begin until 12 noon following, so that the actual free time is frequently longer than forty-eight hours. Free time, moreover, is extended in case of interference by weather, delayed, or improper notice and railroad errors or omissions.

There were, until recently, modifications of this general practice because of special business conditions, legal enactments, and for other reasons. In the territory coming within the jurisdiction of the Philadelphia Car Demurrage Bureau,¹ for instance, an additional forty-eight hours was allowed for sampling, inspecting and selling wheat, corn, oats, barley, malt, rye, mill feed, cerealine, maizone, malt sprouts, hay and straw when sold subject to the rules of the Commercial Exchange of Philadelphia, and perishable fruits, vegetables, and berries sold subject to the rules of the Produce Exchange. An additional twenty-four hours, or as much time as may be consumed, was allowed on cars containing pig iron, scrap iron, and ore which is analyzed before unloading; and an additional twenty-four hours was allowed on tank cars containing cylinder oil.² The rules, moreover, did not apply to cars loaded with company material, with coal or coke shipped to a port for delivery direct to vessels, or to be stored for shipment by vessels, or with freight for export or coastwise movement. They did not apply to empty cars for loading coal and ore at mines or mine sidings; or coke at coke ovens. At present, as is common throughout the United States, they do not apply to cars loaded with live stock, to private cars³ on private tracks, to freight for transshipment to vessels, and

¹ P. R. R. Co., Demurrage Rules and Regulations. G. D.—I. C. C. No. 19 (Apr. 15, 1908).

² *Ibid.*, Supplement of Sept. 25, 1908.

³ See footnote on page 198.

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to empty cars for loading coal at mines or mine sidings, or coke at coke ovens. Live stock is exempt, because the length of time which cattle remain in cars is usually fixed by law; and private cars on private tracks are exempt by order of the Interstate Commerce Commission.¹ Aside from these exceptions, the general rule of forty-eight hours has, since April 1, 1910, been applied to all commodities not exempted by state statute.

Provision, however, is usually made for so-called "twenty-four-hour average contracts." The carrier and shipper enter into a special contract, and the shipper is credited with whatever time, within twenty-four hours, that he does not use and is debited with any excess. (Form 1.) The average for the month is the basis for settlement. As is generally provided in the rules of the car demurrage bureaus: "Agents will each day render reports of the cars loaded and unloaded by those operating under such average contract, and if the average time exceeds twenty-four hours per car in the calendar month the excess detention will be charged at the rate of \$1 per car per day." The average contract is usually entered into only by large shippers who do not consider a car load as a fair unit of shipment.

In fifteen states the general demurrage rule has been modified by statute. Alabama, Kansas, Minnesota, Missouri, Texas, North Carolina, Ohio, and Virginia have extended the free time to seventy-two hours in the case of specified classes of freight or cars of prescribed capacity. In Connecticut and Vermont the free time on all intra-state freight is fixed at ninety-six hours, and in New Jersey and South Carolina at seventy-two hours. In Florida the

¹ Since the above was written, the commission has ruled that private cars on private tracks are *not exempt*. I. C. C. Repts., Dec. 13, 1910. Procter and Gamble Co. *vs.* Cincinnati, Hamilton and Dayton Ry.

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REPORT

DEMURRAGE AND RECIPROCAL DEMURRAGE

free time on certain kinds of freight is fixed at from seventy-two to ninety-six hours, and in Louisiana at from ninety-six hours to ten days.

The demurrage charge in Arkansas, Kansas, and South Dakota is fixed at \$5 per car per day, in Oregon at \$2, and the Texas statute, since declared unconstitutional, provided for a charge of \$25. The railroad commissions of thirteen states have promulgated demurrage rules, and six additional state statutes provide for "reasonable and fair distribution."

The Interstate Commerce Commission¹ as well as several courts have held that these state demurrage acts are legally applicable only to intrastate traffic, but the difficulty of distinguishing what is intrastate traffic causes the carriers in some of these states to apply them also to interstate freights. Because of custom and the laws of Vermont and Connecticut, free time throughout New England is commonly fixed at ninety-six hours. An appeal has been made by various New England mercantile associations to have this changed in order that the National Code of Demurrage Rules may go into effect. The practice of modifying local demurrage rules to meet special conditions and the state regulations have greatly hampered the movement for uniformity. Nevertheless, in October, 1907, the American Railway Association adopted a general "Code of Car Demurrage Rules,"² the adoption of which was recommended to the various bureaus subject to such changes as might be required to meet local conditions. This code was amended in April and November, 1908, and in May, 1909; and on January 27, 1910, the

¹ *Wilson Produce Co. vs. P. R. R.*, XIV I. C. C. Reps., 170 (1908).

² *Interchange of Freight Cars and Demurrage*, W. F. Allen, *Bul. International Railway Congress*, Jan., 1910, p. 229.

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Association substituted a new uniform¹ code of demurrage rules that had been approved by the National Association of Railway Commissioners and the Interstate Commerce Commission.

This code of "National Car Demurrage Rules" contains nine rules. Number 1 extends its scope to all cars except those loaded with live stock and empty cars at mines, mine sidings or coke ovens. Number 2 establishes the free time for all loading and unloading, except into vessels for transshipment, at forty-eight hours; and at twenty-four hours for reconsignment or switching, delivery to or forwarding by a connecting line, and for cars held in transit for inspection and grading. Number 3 fixes the method of computing time, and Numbers 4, 5, and 6 provide for notice of arrival to consignee within twenty-four hours after arrival of cars and billing at destination, and specify the practice in case of inability to deliver at specially designated places. Number 7 fixes the charge at \$1 per car per day. Number 8 exempts payment in case of weather interference, cars needlessly bunched by error of the carrier, demand of charges in excess of published tariffs, delayed or improper notice, or railroad errors and omissions. Rule 9 provides for a uniform average demurrage agreement.

These National Car Demurrage Rules had the status of the previous Code of Car Demurrage Rules, and were subject to local variations, until November 1, 1910, when they went into effect quite generally.

II. TRACK STORAGE CHARGES

Some railways at special points not only collect demurrage but also assess "track storage charges." These are

¹ *Official Railway Equipment Register*, Feb., 1910, p. 15.

DEMURRAGE AND RECIPROCAL DEMURRAGE

not usually regarded as demurrage, but as a special penalty to meet unusual conditions, and are not as a rule assessed by the regular demurrage bureaus, but by the carriers themselves. One of the leading instances of track storage charges is found at the great fruit and produce yard of the Pennsylvania Railroad at Pittsburg. The practice arose among the dealers of selling about eighty-five per cent of their produce from the cars. The advantage of using the cars as warehouses was so great that traders could easily afford to pay the usual demurrage of \$1 per car per day after the expiration of forty-eight hours. This method of doing business defeated the purpose of demurrage, and caused serious congestion in the freight yard.

To remedy this situation the Pennsylvania Railroad Company, in 1902, filed with the Interstate Commerce Commission a track storage tariff¹ providing for the payment, in addition to the regular demurrage charge, \$1 per car per day for the first two days of detention longer than forty-eight hours, \$3 for the next two days, and \$4 for each succeeding day. The charges were paid until May, 1907, when the state legislature enacted a statute fixing the maximum car service charges at \$1 per day and the free time at forty-eight hours. After the enactment of this law the matter was taken before the Interstate Commerce Commission² which held that the track storage charges "represent a perfectly legitimate attempt to prevent the abuse of cars and terminal facilities," and that the state law does not affect interstate traffic.

A similar tariff of track storage charges, applicable to all commodities except coal and coke, prevails at those railway yards in New York City at which track delivery of

¹ Pennsylvania Railroad Track Storage Tariff, I. C. C. No. 77.

² *Wilson Produce Co. vs. P. R. R.*, XIV I. C. C. Reps., 170 (1908).

LIST OF CAR SERVICE ASSOCIATIONS, SEPTEMBER 15, 1910

- (1) Central New York Car Demurrage Bureau.
- (2) New York and New Jersey Car Service Association.
- (3) Northeastern Pennsylvania Car Demurrage Bureau.
- (4) Philadelphia Car Demurrage Bureau.
- (5) Baltimore and Washington Car Demurrage Bureau.
- (6) Pittsburg Car Demurrage Bureau.
- (7) Western New York Car Demurrage Association.
- (8) Cleveland Car Demurrage Bureau.
- (9) Columbus Car Demurrage Bureau.
- (10) Virginia and West Virginia Demurrage Bureau.
- (11) North Carolina Car Service Association.
- (12) Southeastern Demurrage Bureau.
- (13) Alabama Demurrage and Storage Bureau.
- (14) Southern Demurrage and Storage Bureau.
- (15) Memphis Demurrage and Storage Bureau.
- (16) Nashville Demurrage and Storage Bureau.
- (17) East Tennessee Demurrage and Storage Bureau.
- (18) Louisville Car Service and Storage Department.
- (19) Cincinnati Car Demurrage Bureau.
- (20) Toledo Car Demurrage Bureau.
- (21) Indiana Car Demurrage Bureau.
- (22) Michigan Car Demurrage Bureau.
- (23) Chicago Demurrage Bureau.
- (24) Illinois and Iowa Demurrage Bureau.
- (25) Wisconsin Demurrage Bureau.
- (26) Lake Superior Car Service Association.
- (27) Missabe Range Car Service Association.
- (28) Northern Demurrage Bureau.
- (29) Central Demurrage and Storage Bureau.
- (30) Missouri Valley Demurrage and Storage Bureau.
- (31) Western Demurrage Bureau.
- (32) Texas Car Service Association.
- (33) Colorado Demurrage Bureau.
- (34) Intermountain Demurrage Bureau.
- (35) Montana Demurrage Bureau.
- (36) Pacific Car Service Bureau.
- (37) Pacific Northwest Demurrage Bureau.
- (38) Canadian Car Service Bureau (British Columbia Branch).
- (39) Canadian Car Service Bureau (Western Lines).
- (40) Canadian Car Service Bureau (Eastern Lines).



DEMURRAGE AND RECIPROCAL DEMURRAGE

car-load freight is made. In addition to the usual car demurrage, \$1 per car per day is assessed on the third day after expiration of free time, \$2 on the fourth day, \$3 on the fifth, \$4 on the sixth, and \$5 on each succeeding day. These charges were likewise upheld by the Interstate Commerce Commission.¹ A similar practice exists among the carriers dealing with the fruit and produce shippers of the Pacific Coast.

III. THE WORK OF CAR SERVICE ASSOCIATIONS

Car demurrage twenty years ago, if charged at all, was assessed by each road individually. The desire for increased car performance, however, resulted in the organization of the first demurrage bureau in 1887 by the railways centering at Omaha, and the idea was rapidly taken up by other companies. Gradually these bureaus undertook other services than that of increasing car mileage; they sought to reduce car detention as being unfair to those shippers unable to secure needed cars; they endeavored to decrease congestion in terminals; and they brought about a reduction in switching expenses. The number of associations grew rapidly, and upon the first day of November, 1910, there were thirty-seven car service associations or demurrage bureaus in the United States and three in Canada. (See Map 1.) Some associations were then abolished.

The association or bureau is concerned with the cars only from the time they are placed at the disposal of the shipper or consignee until they are loaded or unloaded. Its work is to compute the demurrage which the shipper or consignee owes, and to inform the carrier of the amount

¹ *N. Y. Hay Exchange Association vs. P. R. R. et al.*, XIV I. C. C. Reps., 178 (1908).

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due; the carrier attends to the collection and informs the bureau as to amounts received.

The practice of the Virginia and West Virginia Demurrage Bureau may be regarded typical. As the freight cars arrive or depart, the agents at the various yards make notations in the handbooks with which they are provided, and the required information is then transferred to the permanent books. Each agent is provided with the prescribed

[illegible]**FORM 2.**

forms of the demurrage bureau and is obliged to report daily on Form No. 2 all cars that have become subject to the car service rules during the twenty-four hours ending at 6 P.M. The report states the initials, number and contents of the cars, the time when they arrived, were ordered, placed and released, the amount of detention, and the demurrage charges accrued.

Four times each month, on Form 3 the agents make a report of all demurrage charges collected; and on the last day of each month they make a monthly report on Form 4 of all uncollected demurrage. A special form is

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the hands of a semi-independent organization which represents all the carriers members of it. Carriers know they cannot violate rules without knowledge of the bureau, and shippers, knowing demurrage is controlled by the bureau, do not expect carriers to grant them favors. Form 5 is a bill for demurrage due under the average contract plan.

D & C. Bill No. _____

Station, _____

On _____ 1901

To _____ Rail. Company, Dr

For Car Demurrage earned in accordance with agreement completed as shown below

EXCESS DEBITS FOR THE MONTH OF _____ 1901							
	NO OF CARS EXCEEDED	EXCESS	EXCESS	EXCESS	EXCESS	EXCESS	Amount
Class 1 Cars							<div style="border: 1px solid black; padding: 2px;"> \$ 00 1000000 </div>
Class 2 Cars							
Totals							

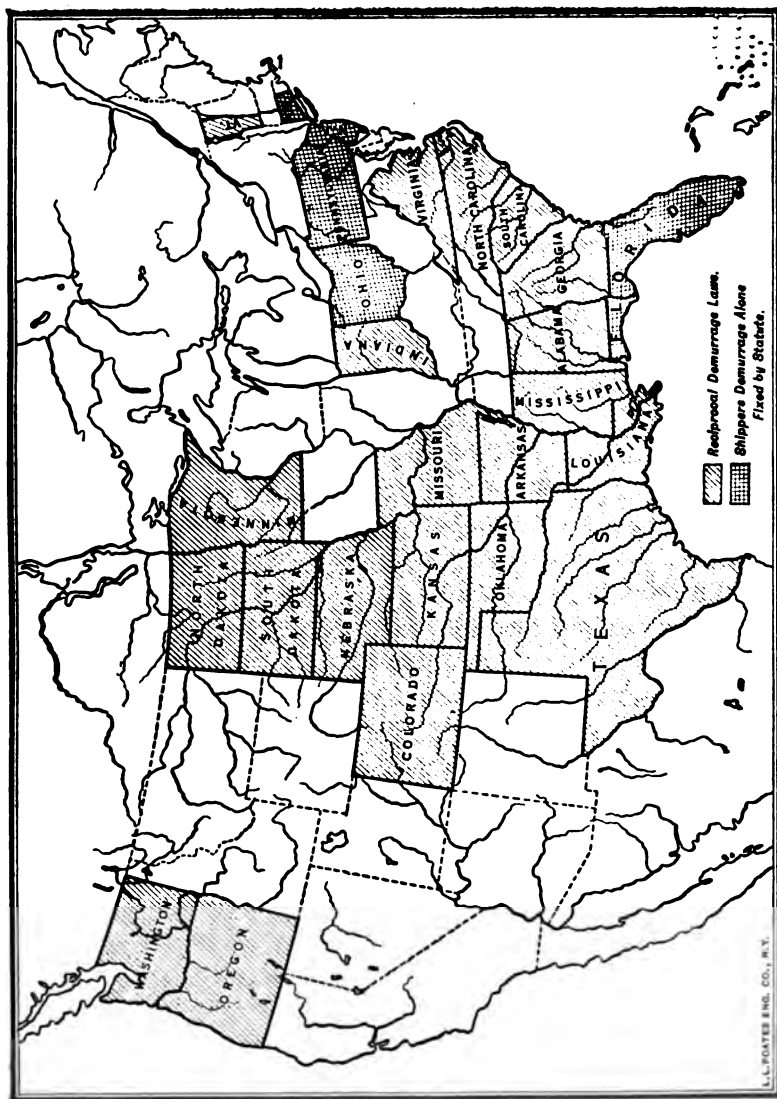
Revised payment for the Company.

Date _____ 1901

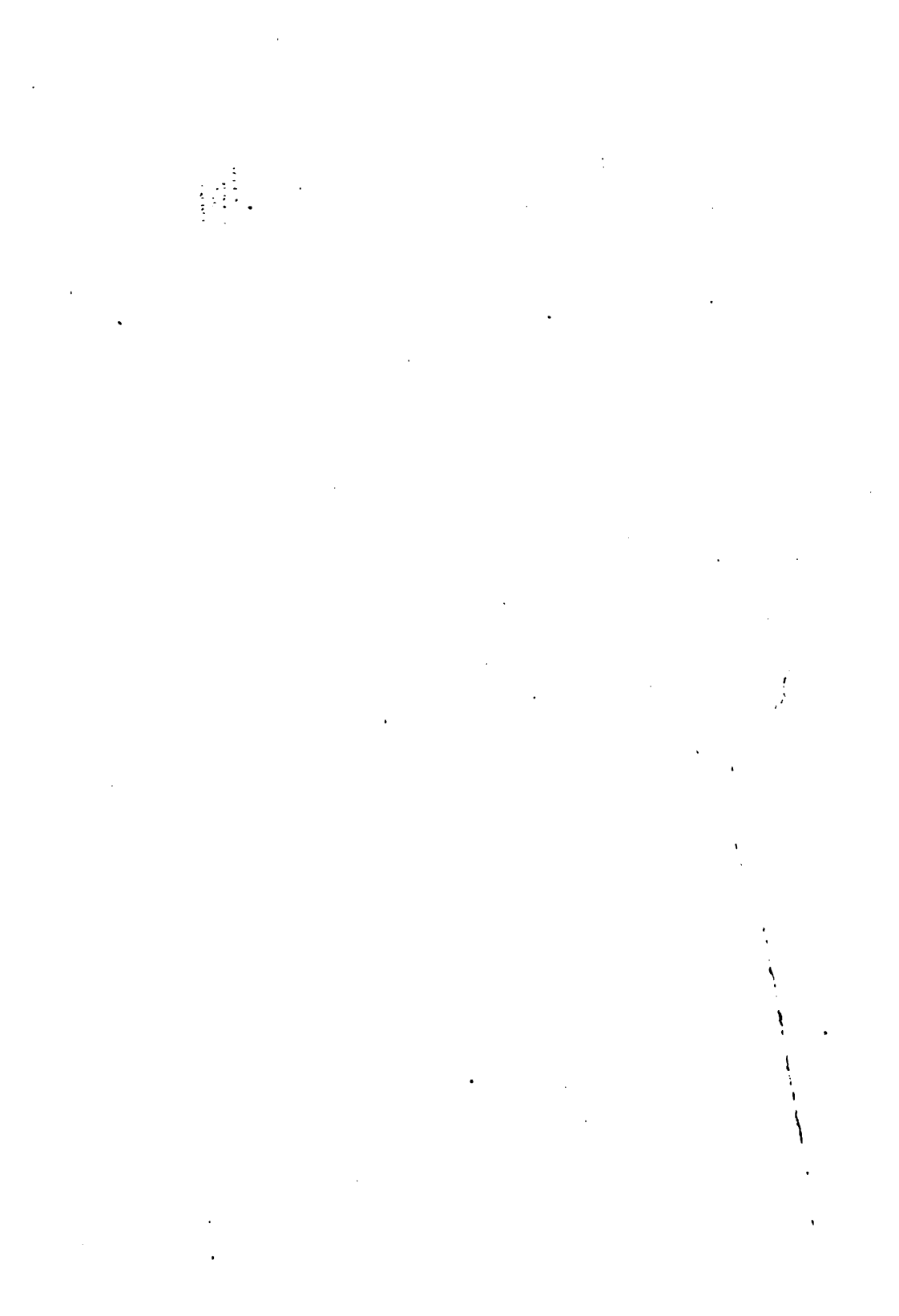
Agreed _____

FORM 5.

The jurisdiction of the bureaus extends over most of the United States and Canada. In a few regions, however, there are no bureaus, notably in New England, Arkansas, and most of Wyoming. In New England there was a bureau until 1908, when it was abolished. In such regions the carriers do their own assessment, and enforce their own rules as they see fit. The code of car service rules of the American Railway Association, moreover, provides that at points not covered by the rules of a car demurrage bureau, or by statute, demurrage should be charged under the terms of the National Car Demurrage Rules approved by the American Railway Association. These rules provide for the usual charge of \$1 per car per day after the expiration of forty-eight hours.



MAP 2.—STATES HAVING RECIPROCAL OR SHIPPERS' DEMURRAGE LAWS.



DEMURRAGE AND RECIPROCAL DEMURRAGE

In the region east of Chicago and north of the Ohio the railroads have recently decided that demurrage bureaus are no longer necessary, and each company began to compute its own demurrage on November 1, 1910. The bureaus throughout the remainder of the country are still active.

IV. DEMURRAGE AND RECIPROCAL DEMURRAGE LAWS

During recent years, demurrage rules have been modified by law in numerous states. As was mentioned above, a number of state statutes have been enacted to increase the free time granted to shippers and a few to increase the charge. A number of others merely legalize the customary rule of \$1 per car per day, with forty-eight hours free time. In all, twenty-one states have laws regulating shippers' demurrage.

In twenty-one states, moreover, as is shown in the accompanying map (No. 2), there are statutes which provide for "reciprocal demurrage." While these laws usually regulate shippers' demurrage, their main provisions are those imposing a penalty upon the carriers in case they fail to furnish a specified number of cars within a stated time, to haul the cars a prescribed minimum number of miles per day, and to deliver the cars within a stated time.

Owing to the industrial depression and car surplus of 1907 to 1910, the carriers have not as yet been seriously burdened by these statutes, and their legality has not been finally decided. An earlier Texas statute was declared unconstitutional,¹ for its penalty was so severe as to impose burdens upon interstate commerce, but a new statute was enacted in 1907. The provisions of state reciprocal demurrage laws, of course, are applicable only to intrastate traffic.

¹ *Houston and Texas Central Railroad vs. Mayes*, 201 U. S., 321.

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Demurrage laws, it should be noted, are scarcely "reciprocal." They attempt to compel the carrier to furnish cars when the shippers demand them, but do nothing for the carrier in periods of dullness when his cars are idle. They are rather compulsory car service laws, to which the term demurrage has been applied because of the analogy between the provisions of the laws and the demurrage rules enforced by the carriers against shippers and consignees.

The wisdom of such statutes is questionable. When there is a surplus of cars such laws are unnecessary. In times of car shortage the most that can be required of railways is that they shall fairly apportion their equipment among the patrons of the road; and the enforcement of such a general requirement is distinctly an administrative problem that should be dealt with by a commission with authority to regulate the services as well as the charges of railways.

The problems of car service and efficiency are of relatively recent origin. Little was heard of them before the great expansion of railway tonnage during the first decade of the present century. This explains why the car service rules have not been uniform among all railways and why the observance of the rules has not been stricter; the same fact accounts for the opposition of the public to car service rules and for the enactment of laws imposing hard and fast requirements upon carriers. It now seems probable that carriers may observe uniform regulations, and that shippers and consignees will realize the desirability of the impartial enforcement of such rules. Should this prove true, public interference with car service will need to consist only of administrative regulation, the primary purpose of which will be the prevention of unreasonable discriminations. Moreover, this task of public regulation will be simplified by

DEMURRAGE AND RECIPROCAL DEMURRAGE

every decision of the courts defining the duties of the carriers and the rights of the public as regards car service.

REFERENCES

1. Demurrage Rules and Regulations, Pennsylvania Railroad Company, G. D.—I. C. C. No. 19 (April 15, 1908); Pennsylvania Railroad Track Storage Tariff, R. R.—I. C. C. No. 77 (1902); Philadelphia and Reading Co., Rules governing Car Demurrage.—I. C. C.—J, No. 2090 (Apr. 1, 1910).

2. *In re* Demurrage Charges on Privately Owned Tank Cars, XIII I. C. C. Reps., 378 (1908); Wilson Produce Co. *vs.* Penna. Railroad Co., XIV I. C. C. Reps., 170 (1908); N. Y. Hay Exchange Association *vs.* Penna. Railroad Co. *et al.*, XIV I. C. C. Reps., 178 (1908).

3. *Houston & Texas Central Railroad vs. Mayes*, 201 U. S., 321 (1906).

4. *Official Railway Equipment Register*, published monthly by The Railway Equipment and Publication Co. at 24 Park Place, New York.

5. W. F. Allen, "Interchange of Freight Cars and Demurrage," *Bulletin of the International Railway Congress*, January, 1910, pp. 11-237. (Contains demurrage rules in United States and foreign countries.)

6. "Digest of Reciprocal Demurrage Laws in The Several States," *Railway Age*, vol. xlv, p. 765, November 29, 1907.

7. G. G. Huebner, "Five Years of Railway Legislation by the States," in *Annals American Academy Political and Social Science*, vol. xxxii, pp. 138-156, July, 1908.

8. "The States as Regulators of Freight Car Service and Demurrage," in *Railroad Age Gazette*, vol. xlv, pp. 1197-1198, October 23, 1908.

9. American Railway Association, Car Service Rules, Per Diem Rules, Switching Reclaim Rules and National Car Demurrage Rules, July, 1910.

CHAPTER XII

SHIPPERS' CARS AND PRIVATE CAR LINES

Historical development of refrigerator lines—Of oil tank lines—Of stock car lines—Of coal and ore cars—Types, number, and classification of private cars—Financial arrangements of private car owners and railroad companies—Refrigeration charges—Seven complaints against private cars—Four arguments favoring use of private cars—Present status of private car system—References.

I. HISTORICAL DEVELOPMENT

ALTHOUGH, in its present form, the private car problem has existed but a quarter century, private cars have been operated from the very beginning of American railways. There are, in general, three historical periods. The first begins with the earliest operation of railroads and lasts but a relatively short time. It is the period during which the turnpike theory of "tolls" prevailed. The carrier was to provide the roadbed and motive power, while the shipper or car company supplied the cars. The car owner was obliged to pay the carrier a sum fixed by law or by agreement for the use of the track and motive power. The second period is that of the early fast freight lines, and extends from about 1860 to 1875. Many of these freight lines were separate car companies, owning their equipment, and are to be classed as a form of private car companies. They will be discussed at greater length in a later chapter.

The third period extends from about 1880 to the present.

SHIPPERS' CARS AND PRIVATE CAR LINES

The system of shippers' cars and private car lines that grew up during these years is similar in some respects to that which prevailed in the days of railway toll roads, but differs from it in at least two fundamental respects. In the first place, it was adopted neither because of any theory as to the functions of the railway nor because of a general need for cars, but primarily to meet the need and demand for certain special equipment cars which the carriers failed to provide for the movement of fresh meats, fruits, vegetables, petroleum, live stock, poultry, coal, brewery products, and other like commodities.

The other difference between the early and the present period is that car owners do not now pay toll to the carrier for the use of the roadbed and motive power, but receive payment from the carrier for the use of the special equipment. Instead of hiring the carrier's tracks, the carrier now rents cars belonging to shippers or private car companies.

Development of Refrigerator Lines.—The first important advance in the private car business was made in the construction of refrigerator cars. Many serious obstacles confronted the shippers of perishable freight. The invention of a successful refrigerator car was itself a task of several years' duration. In the early sixties the Michigan Central, for the purpose of carrying fresh meat from Chicago to New York and Boston, fitted some box cars with bins holding from two to three thousand pounds of ice. Mr. W. W. Chandler, of the Pennsylvania Railroad, was likewise experimenting at about the same time with box cars for the carriage of dairy products. In 1867 the first patent for a refrigerator car was granted to Mr. J. B. Sutherland, of Detroit, and in the following year a patent was granted to Mr. D. W. Davis, of Detroit, for the well-known "Davis car." A Mr. Hammond, also of Detroit, was at this time

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interested in the refrigeration of meat in transit, and in 1871 made his first successful shipment. In the early experiments meat was permitted to come in contact with the ice, but it was found that the meat became discolored and quickly spoiled. Then the meat was "suspended from the rafters and ceiling, but when the car was in motion and going around curves the halves of meat were set swinging and communicated their motion to the car. Several wrecks occurred which were attributed to this cause, and the hostility of the railroads was awakened." The next step was to partition off one end of the car as an ice bunker, and the inventors were then on the road to success, although not until several years later was it discovered that successful refrigeration depends mainly upon providing for a circulation of air over the ice and the meat.

"A draught of air passing through a bunker, or ice chest, in the upper corner of a car becomes chilled, so that it is heavier than the air which it meets, and consequently it drops down, circulating through the car, and finally, after it has lost its chill and becomes lighter than the incoming current, rises and passes out of the ventilator. Thus a current of chilled air is constantly circulating about the meat, which is securely racked and does not touch the ice at all."¹

Similar difficulty was found in the refrigeration of fruit in transit. In 1866 Mr. Parker Earle, of Cobden, Ill., used large ice chests to ship fruit by express, but the method was too expensive. One half of a car load shipped in a Davis car in 1868 was frozen and the remainder was unequally cooled; and two car loads shipped in meat cars of the Michigan Central were spoiled by the heat. It was not until

¹J. O. Armour, "The Packers, the Private Car Lines and the People," p. 21.

SHIPPERS' CARS AND PRIVATE CAR LINES

1872 that Mr. Earle made a successful shipment. He made use of a cooling house, the principle of which was the same as that of the large "precooling" establishments recently erected in California. The extensive shipment of fruit from the West and South to the East did not begin until the later 80's, after the principle of the cold draughts of air had been incorporated in the construction of cars for the shipment of fresh meats.

After the refrigerator car was invented, new obstacles to their use arose. Well-established companies had for some years been engaged in the shipment of live cattle from Western centers to Eastern markets, and these interests strongly opposed the building of refrigerator cars. If fresh meat could be successfully shipped from Chicago to the East, their business would decline; indeed, that is what later occurred.

The private refrigerator car lines originated because the carriers refused to construct the cars. Some railway companies regarded their construction as a hazardous venture, and others pleaded the expense involved and the lack of available funds. The only alternative was the construction of the cars by the shippers themselves. The beginning was made by Mr. Swift. Shortly afterwards Mr. Armour ordered some cars, and Nelson Morris, Cudahy, and Schwarzschild & Sulzberger soon followed. Mr. Swift and Mr. Armour began constructing private cars only after their requests to the carriers had been denied. Moreover, the sole purpose at first was to provide themselves with cars for the shipment of their own meats. Not until the profits resulting from their operation became manifest were the shippers' cars converted into private refrigerator car lines engaged in the carriage of meats for shippers generally as well as for the owner of the car line.

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The development of the private fruit car lines was similar. The first private fruit cars were owned by shippers and fruit dealers primarily for use in their own business. Then came the fruit car lines, carrying fruit for the car owner and for other shippers as well. The first line was established in 1886 by a Detroit inventor, who was soon obliged to sell his equipment to Mr. F. A. Thomas, a fruit and produce dealer of Chicago. Soon after this appeared the Goodell Line, which was owned by Porter Bros., a Chicago fruit firm; and then the Continental Fruit Express of Mr. E. T. Earl, likewise a fruit dealer. By this time, however, the Armour and Swift car lines had proved so profitable in the meat business that their owners entered the fruit business on an extensive scale. The other lines likewise made a business of carrying fruit for the public.

Intense competition thus arose. The California Fruit Transportation Company was absorbed by the Swift lines, and the Goodell Line and the Continental Fruit Express were bought by the Armour lines. The independent private fruit lines remaining were too small seriously to lessen the control held by the Swift and Armour lines. The Armour lines carried nearly all the California fruit until the Santa Fé and, later, the Harriman lines organized subsidiary car companies of their own.

Development of Oil Tank Lines.—The origin of the oil tank car lines is likewise found in the need for special equipment and in the early refusal of the carriers to provide it. The shipping of oil in barrels loaded in box cars was clearly inadequate, and the logical way to transport oil was in the now commonly known cylindrical tanks, holding from 80 to 250 barrels. The refusal of the carriers to build them, except to a limited extent, practically obliged the large shippers to organize lines of their own, the original purpose

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being to use the cars for the shipment of their own product. The Union Tank Line Company, the subsidiary of the Standard Oil Company, for instance, now confines itself to the products of the parent company, and has, in the past, leased only such of its cars to the carriers as it did not itself require. The withdrawal of some 325 of its cars from public use on the Southern Pacific in 1901 caused much hardship among the independent refineries of California.

The expense involved in tank car construction enabled only the largest producers to establish car lines; and this, coupled with the failure of the railways to supply the necessary equipment, gave rise to much dissatisfaction. By far the largest tank line is the Union Tank Line Company, with some ten thousand cars. Among the leading minor lines are the Pure Oil Company; Waters Pierce Company, another Standard Oil concern; Seaboard Refining Company, Colonial Tank Line, Crescent Tank Line, and the Gulf Refining Company.

Tank line companies have also been organized in several other industries; there are various cottonseed oil lines, numerous chemical companies owning tank cars, and the H. J. Heinz Pickle Refrigerator¹ Line, which operates between forty and fifty vinegar and pickle tank cars.

Development of Stock Car Lines.—A third large group of private car lines consists of those belonging to stock car companies. Their origin is similar to that of the refrigerator and oil tank car lines in that the stock car companies own special equipment which the carriers were unwilling to supply. The stock car lines, however, were not generally formed by shippers who wished to ship their own product. There are instances of large cattle men owning cars; but the

¹ Cars leased from Armour Car Lines.

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great lines, such as Street's Western Stable Car Line Company, Mathews Car Company, the Doud Stock Car Company, the Mather Stock Car Company, Burton Car Company, Arms Palace Horse Car Company, the American Live Stock Transportation Company, and Swift's Live Stock Express, were organized for the profits to be gotten by leasing special equipment either to the carriers or to shippers.

- The period of organization of the stock car lines extended from about 1880 to 1890. Their cars are equipped with easy-riding trucks, feed and water arrangements, air brakes and couplers, and are of superior construction, suited especially to rapid long-haul service. Mr. A. C. Mather, inventor of the Mather car, was originally actuated solely by humane motives, and before he finally organized a private line spent much time and money in attempting to induce the railways to build "palace stock cars." The stock car companies have long been frowned upon by the carriers, as they more nearly compete with similar equipment owned by the railways than any other of the private car companies.

Live poultry and double-decked sheep cars are of less importance in the private car problem and do not require special discussion in this connection.

Development of Coal and Ore Cars, etc.—Coal and ore cars were primarily built by the shippers for their own use. At first it was largely a question of reducing costs by the use of especially constructed dump cars, which the carriers did not always provide. Later other advantages also appeared. The rental paid by the carriers gave a fair profit on the investment, and in times of car shortage the practice of the carriers in not counting the private cars in the available commercial equipment frequently gave a competitive

SHIPPERS' CARS AND PRIVATE CAR LINES

advantage to the owners of private cars, who thus had their own cars and also their full share of the cars owned by the railways. The importance of this advantage is seen in the fact that, since the Interstate Commerce Commission ruled that private cars must be included in the quota assigned each mine in the distribution of the total supply of cars, some coal car owners have disposed of their equipment.

Types of Private Cars.—There are many types of private cars, the greater portion of which are special equipment cars. The leading types are the various refrigerator cars used for carrying meats, fruits, vegetables, dairy products, and brewery products; the tank cars employed to carry petroleum, cottonseed oil, chemicals, vinegar, and other fluid commodities; palace stock cars, and poultry cars. Lastly, there are the coal and ore cars which originally were special equipment cars, but no longer differ from those owned by the carriers, and the miscellaneous box cars owned by the manufacturing concerns.

Total Number of Private Cars.—In 1902 Mr. J. W. Midgley estimated that there were 130,846 private cars in the United States, the number and value of the several classes of cars being as follows:

	Number.	Value per Car.	Total Value.
Refrigerator.....	54,522	\$800	\$43,617,600
Box.....	21,178	500	10,589,000
Tank.....	14,531	600	8,718,600
Stock.....	11,139	600	6,683,400
Coal.....	16,143	500	8,071,500
Flat.....	853	450	383,850
Furniture and Vehicle.....	1,533	600	919,800
Poultry.....	325	800	260,000
Unclassified.....	10,622	500	5,311,000
Total.....	130,846	\$84,554,750

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It was estimated by Dr. L. D. Weld in 1906 that there were then about 150,000 private freight cars. There were 2,200,000 freight cars owned by the carriers in 1908. The freight equipment in 1910 probably includes 2,200,000 railway cars and about 155,000 private cars.

Classification of Private Cars.—On the basis of ownership and management, these cars may be divided into two classes. The first class, known as *shippers' cars*, includes all those owned by the shipper and ordinarily used for the carriage of the owner's property. Such are most of the coal, ore, manufacturers', oil, brewery, and fresh-meat cars. The second class, known as *private car lines*, includes those ordinarily owned by private car companies, who lease them to the carriers or to shippers for general use. Such are the fruit, dairy, poultry, and stock car lines. The classification is not absolutely clear-cut, as shippers' cars are sometimes used to carry products other than those of the car owner, and private car companies sometimes become shippers as well as car owners. The fundamental distinction, however, is manifest.

II. FINANCIAL ARRANGEMENTS OF PRIVATE CAR OWNERS

The private car owner shipping freight in his own car pays the same freight rate as he would pay if he shipped his goods in a railway car. The rate is paid to the carrier, and is the same on freight shipped in private cars as in cars owned by the carrier.

In the absence of a contract, the payment made by the carrier to the car owner is based upon "car mileage." For a very short time after private cars were introduced, no mileage rental was paid; but it soon became a common practice for the railways to allow mileage on the loaded cars. Tank car companies were even obliged to pay a

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return charge to the railway for hauling the empty cars. As was seen, however, most of the early private car owners were shippers as well, and it was this fact and the competition among the carriers which soon resulted in the abandonment of this return charge and the adoption of the practice of paying mileage on empty as well as loaded cars. The prevailing rate of mileage paid by one railway to another for the use of foreign cars was three quarters of a cent per car per mile, and this, with few exceptions, became the general rate in the case of private tank cars.

The experience in the case of refrigerator cars was similar. The fact that the car companies were subsidiary to the largest packers and shippers of meat soon resulted in the usual mileage of three quarters of a cent east of Chicago and St. Louis. West of those points the rivalry between the carrier for traffic was so intense that one cent per mile, with a few exceptions, became the general rate. Three quarters of a cent became the usual mileage rate on all other private cars, with the exception of the palace livestock cars.

In 1894 the carriers attempted to reduce the mileage charge, which they were unwillingly paying, and a conference of railway officials was called. They were met by the representative of the Union Tank Line Company, who threatened to withhold Standard Oil traffic from any and all lines that failed to pay the existing mileage allowances. He said: "I never saw a company but what there was a weak sister among them. I will single out the weakest company that can be found and put all our shipments to the Twin Cities and to the Missouri River on that line, provided they will give us three quarters of a cent per mile for our tank cars, loaded or empty." The "weak sister" was

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forthcoming, and the attempt of the carriers was effectively frustrated.

Private stock car lines, however, have always had more difficulty in obtaining mileage. The fundamental reason was that they are not usually themselves shippers of live stock, and a second reason was that their cars seriously competed with those owned by the carriers. For a considerable number of years the railways refused to pay them any mileage whatsoever. In addition, some of the carriers increased the freight rate from twenty to fifty per cent on live stock shipped in cars longer than the ordinary railway stock car, and the Chicago & Alton charged them five cents per mile for hauling empty cars. In this discrimination the railways were upheld by the Interstate Commerce Commission.¹ Soon one of the large meat packers added some stock cars to his quota of private cars, and when he was given the general three quarters of a cent mileage it became necessary to pay it also to other stock companies. The ownership of most of the private stock cars by companies who do not originate traffic, however, still constituted an inherent weakness in the position of the car owners, and in 1894 the mileage rate was reduced to six mills.

Though in 1902 mileage was superseded by per diem as the method of paying for the use of foreign railway cars, it was retained in the case of private cars, and Article XVI still exempts them from the general Code of Per Diem Rules.

The standard mileage on refrigerator cars east of Chicago is three quarters of a cent. There are but few exceptions, such as the one-cent rate over the Grand Trunk on beef, via Montreal, the one-cent rate of the Boston & Maine on cars containing fresh beef, and the one-cent rate paid by

¹ *Burton Stock Car Co. vs. C. B. & Q. et al.* I, I. C. C. Repts. 132, 1887.

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the Wabash on cars of the Swift Refrigerator Line. Between points west of Chicago and east of Rocky Mountain points the standard mileage on refrigerator cars is one cent. Here again are certain exceptions, such as the three quarters of a cent mileage on fruit and dairy cars over some lines and the six mills which the Southern Pacific paid on loaded cars only when it had a contract with the Armour lines. The general mileage west of the Rocky Mountains is three quarters of a cent on loaded cars only. "Tank cars receive uniformly three quarters of a cent, and stock cars generally six mills per mile, loaded or empty, throughout the country. Coal cars owned by private companies receive three quarters of a cent as mileage rental."

Very frequently special financial arrangements are entered into, and in such cases contracts are made. One form of private car contract is the *simple agreement*, which is sometimes made with the carrier, particularly by the car lines of the meat packers. The usual clauses of such agreements are those providing for a certain car mileage for a stated period, a maximum freight rate on the products shipped, and the promise on the part of the shipper to the contracting carrier of a certain amount of traffic.

A second form of contract is sometimes spoken of as the *commission contract*. Its distinguishing feature is that the carrier agrees to pay a certain percentage of the freight rate as a commission to the car owner. The car company, in turn, acts practically as a solicitor of freight for the contracting railway. The Missouri River Dispatch,¹ for instance, has such a contract with the Erie Railroad, calling for a 12½ per cent commission. The New York Dispatch²

¹ Interstate Commerce Commission Hearings, October, 1904, pp. 94, 101.

² *Ibid.*, p. 154.

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gets the same commission from the Grand Trunk and Central of Vermont and 10 per cent from the West Shore. The Dairy Refrigerator Dispatch¹ gets 12½ per cent from the Delaware, Lackawanna & Western, and the Milwaukee Refrigerator Transit Company² received 12½ per cent from the Erie and the Missouri, Kansas & Texas until, in that particular instance, it was declared an unlawful rebate. The representative of the Armour Car Lines testified that in the shipment of dairy products the carriers sometimes grant 12½ per cent of the freight rate as payment for the ice and supervision furnished by the car company.³

The third and best-known form of contract is the so-called *exclusive contract*. The carrier agrees to use only the cars of a certain car line for specified traffic and to pay an agreed car mileage. The car line, in turn, agrees to furnish sufficient equipment to handle all shipments offered and to attend to the refrigeration. This form of contract is confined to the shipment of fresh fruit,⁴ berries, and vegetables, and is written mainly by the Armour Car Lines, which began the policy in 1897, and in 1905 had such contracts with about twenty-one railroads carrying fruit, vegetables, and berries out of Georgia,⁵ Florida, Michigan, Tennessee, Missouri, Arkansas, and California.

Many complaints have been made against the exclusive contract, to the effect that it results in increased icing charges, that it creates a practical monopoly, and prevents carriers from freely adding to their own refrigeration

¹ Interstate Commerce Commission Hearings, October, 1904, p. 156.

² Eighteenth Annual Report, Interstate Commerce Commission, pp. 10-19, 1904.

³ Interstate Commerce Hearings, October, 1904, pp. 62-63.

⁴ G. B. Robbins, Interstate Commerce Hearings, October, 1904, p. 75.

⁵ G. B. Robbins, Hearings of Senate Committee on Interstate Commerce (1905), vol. iii, pp. 2420-2421. (Elkins Committee Hearings.)

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equipment. In certain instances¹ the complaint that the icing charges were exorbitant owing to the exclusive contract was upheld by the Interstate Commerce Commission. Much, however, may also be said in favor of such a contract. In many instances it has resulted in improved service. To render the best refrigeration service local icing stations must be built, ice must be purchased, cars must be "parked" in yards and side tracks before the fruit season begins, and other expenses must be incurred which cannot well be undertaken unless the car company has the assurance of a large traffic. Many fruit growers favorably contrast the service thus rendered under exclusive contracts with that previously rendered when various car lines competed against each other. It has been largely a matter of high icing charges versus superior service, and no general conclusion can be drawn. Since the Interstate Commerce Commission has been given power to regulate the icing charges, the main objection to the exclusive contract seems to be removed.

In some instances the financial arrangements are not with the carrier, but with the shipper. Some of the large car line companies lease part of their equipment to shippers, who pay a fixed rental for its use. The Barbarosa Refrigeration Line, a Branch of the Armour Car Lines, for example, operates beer cars that are leased to the Moerlein Brewing Company for a monthly rental of \$16 or \$17 per car.² Similarly, the Armour Car Lines lease the cars of the

¹ Eighteenth Annual Report Interstate Commerce Commission, p. 10-19, 1904; X I. C. C. Reps., 360 (1904), and XI I. C. C. Reps., 129 (1905). *In re* charges for the Transportation and Refrigeration of Fruit Shipped from points on the Père Marquette and Michigan Central Railroads.

² Interstate Commerce Commission Hearings, October, 1904, pp. 54-56.

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Lebanque Refrigerator Line to a brewing company for a monthly rental, and the cars of the Heinz Pickle Refrigerator Line are leased from the Armour Car Lines. Various other apparently independent car lines are wholly dependent upon cars leased from another company. Some of the private stock car lines lease part of their equipment to industries, the cars being put under the lettering of the industry, the rental varying according to the traffic in which the cars are to be used.¹ The Arms Palace Horse Car Company, which especially caters to the shippers of horses and fine cattle, have published tariffs of rental charges, varying with the length of the haul and the capacity and special structure of the cars.² When the car lines lease equipment to an industry for a fixed rental the shipper makes his own arrangements with the railroads, and usually receives the regular car mileage allowance.

In the case of private refrigerator cars an additional and important source of profit is the refrigeration charge. The smaller car companies, as a rule, permit the railway to attend to the icing; in which case the charge usually, though not always, depends upon the actual amount of ice used. The great refrigerator car lines, however, attend to the icing themselves, and usually require a fixed charge per car or package of freight. Except at the very beginning, when fruit car companies collected the icing charges, they were collected by the carrier. The charges always were entirely distinct from the freight rate, however, being fixed by and returned to the car company. Since the passage of the Hepburn Act of 1906 they have been published by the carrier as a part of the transportation charge, but they are still published separate from the freight rate, and collec-

¹ Letter from General Manager of Street's Western Stable Car Line.

² The Arms Palace Horse Car Company, Tariff No. 14.

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tions are turned over to the car companies performing the icing.

The icing charge must necessarily cover more than the actual cost of the ice. The cost of the ice, though it is the greatest, is but one item. Icing stations have been erected by the large car companies at the points from which the cargoes are shipped and at convenient points along the railway tracks, with agents in charge of the stations to attend to the icing, to inspect the loaded cars as they arrive, and to prepare the cars for their cargo before they are loaded. In the shipment of fruit eastward from southern California, for instance, the car when loaded is sent back to Los Angeles to be iced and inspected. If it takes the southern route, it is stopped at Tucson, Ariz., for the same purpose; again at El Paso, Fort Worth, Kansas City, Davenport, Chicago, Galion, Ohio; Hornellsville, N. Y., and East Deerfield, Mass., until it finally arrives at Boston. Interest, taxes, and depreciation, moreover, must be taken into account. The uncertainty of the fruit crop, the seasonal nature of the business, the payment of damages on spoiled fruit, the fact that nearly one half ¹ of the freight in refrigeration cars moves under ventilation without ice are likewise considered in fixing the icing charge.

The general course of refrigeration charges has been downward. The charges on fruit from California to Chicago, for instance, originally varied from \$185 to \$245 per car, according to distance and season. They now ¹ run from \$70 to \$90, according as the traffic originates in the territory adjacent to Sacramento, San José, or Los Angeles. A typical refrigeration tariff at the present time is that from the California fruit districts. The points from which

¹ Tariffs of Union and Southern Pacific.

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shipments are made are divided into three groups, and the part of the country to which the fruit is sent is divided into eight districts. The charges vary accordingly, but are uniform from all common shipping points to all terminal points within a single district. The districts are very irregular. Points such as Butte, Cheyenne, Salt Lake City, Ogden, and Helena are in District A; Atchison, Lincoln, St. Joseph, and Kansas City in B; Chicago, Des Moines, St. Paul, and Milwaukee in C; Battle Creek, Grand Rapids, and Indianapolis in D; Buffalo, Memphis, Cincinnati, Duluth, Pittsburg, and Grand Forks, N. D., in E; Albany, Baltimore, Philadelphia, New York and Washington in F; Boston, Dallas and Houston, Tex.; Providence, and Quebec in G; and New Orleans and the states of the Mississippi, Georgia, Alabama, and South Carolina in H.

In particular instances refrigeration charges have been bitterly complained of by shippers. In 1902, for example, the Père Marquette and Michigan Central railroads made exclusive contracts with the Armour Car Lines, the result of which was that icing charges were increased from 100 to 300 per cent, and the charges were held unreasonable by the Interstate Commerce Commission.¹ Similarly,² the Louisville & Nashville Railroad previously iced fruit cars from Alabama and Mississippi to Chicago for \$27, but when the Armour Car Lines were given an exclusive contract the charge varied from \$60 to \$75. Instances have likewise occurred where pineapples from New Orleans to Cincinnati, over the Illinois Central, which supplies its own cars, were iced at \$11.37 per car, while the charge in a private car

¹ XI I. C. C. Reps., 129 (1905), "The Michigan Fruit Case."

² Interstate Commerce Commission Hearings, October, 1904; p. 205.

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from Mobile was \$45. The Illinois Central iced cars of strawberries from Tennessee to Chicago for \$30, while the corresponding charge in an Armour car was \$84. Many other instances of exorbitant charges, which were to some extent responsible for the recent agitation against private car lines, might be cited. The Hepburn Act of 1906 has largely decreased the complaints against icing charges. They are now published by the carriers, and the same code of reasonableness is applied to them as to freight rates. The Interstate Commerce Commission has the power to revise icing charges in exactly the same way that it can revise freight rates.

III. COMPLAINTS AGAINST PRIVATE CARS

The leading complaints made in recent years against the private car are as follows :

(1) The refrigeration charges, the most fruitful of dissatisfaction, have already been discussed. The complaints were twofold, one being that in certain instances the charges were extortionate, the other that where the private car owner is also a shipper the car mileage paid him gives him an unwarranted competitive advantage over other shippers. At one time the owners of the leading refrigerator line dealt in apples, pineapples,¹ potatoes,² and other produce, and even now the large meat-packing concerns deal in butter, eggs, and poultry. In the fresh-meat trade the icing charge by the shippers who operated refrigerator car lines gave them an advantage over other meat shippers, but the industry is now largely controlled by six leading firms, and they all own private cars.

¹ Interstate Commerce Commission Hearings, October, 1904, p. 108.

² G. B. Robbins, Elkins Committee Hearings, iii, p. 2370; Report of Commissioner of Corporations on the Beef Industry, p. 21.

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(2) The exclusive contract, which was a source of complaint, has been considered with sufficient detail.

(3) A third complaint is against the mileage allowances paid to the private car owners. These, it is claimed, frequently yield more than a fair return on the capital invested, and in cases where the car owner is a shipper give him an unfair competitive advantage. After considering all the items involved¹—rate of mileage, actual mileage traveled, cost of cars, and expenses, such as repairs, expenses of operation, taxes, insurance, and depreciation—the best available data indicate that mileage on refrigerator cars in the dressed-beef and provision trade yields from seventeen to twenty per cent on the capital invested.² In most instances the earnings from mileage allowances on refrigerator cars in the fruit and vegetable traffic do not yield such large returns, as their average mileage is but sixty-five or seventy miles per day, as compared with about one hundred in the beef and provision trade. But the refrigeration charge here yields large profit, and it is estimated that the total annual earnings from mileage and refrigeration amount to from twelve to fifteen per cent on the investment.³

The profit on refrigerator cars used to ship beef, provisions, fruit, and vegetables seems therefore to afford a competitive advantage to the car owner who is a shipper. In other fields of traffic, however, the profits of private car owners are but a reasonable return on the investment. Mileage charges on refrigerator cars used to carry dairy products and brewers' products do not yield excessive

¹ Report on the Beef Industry, p. 272.

² Third Annual Report Interstate Commerce Commission, pp. 15-18. Midgley, *Railway Age*, vol. xxxv, p. 89, 1903; Report on the Beef Industry, ch. vi.

³ Weld, p. 149.

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profits. The only other source of complaint lies in the freight rate commissions, which will be discussed later. The profits on the tank cars are not excessive.¹ For a period of eighteen months the records of the Pennsylvania Lines West of Pittsburg show an average of but 22 miles a day. In 1904 the tank cars of the Cudahy Packing Company averaged about 34½ miles a day, and Mr. Midgley stated that in 1902 tank cars averaged about 32 miles east, and 95 miles west, of the Mississippi. It would seem that the mileage allowances do not yield more than three or four per cent on the money invested. Private stock cars likewise, with 60 miles² as the estimated average daily mileage throughout the year and six mills as the prevailing allowance, do not yield excessive earnings.

(4) Rebates and unfair discriminations have constituted a fourth ground of complaint. Any income on a private car in excess of a fair return on the investment, in cases where the car owner is a shipper, is in the nature of a rebate. More direct rebating has, however, at times been discovered. Refrigerator car officials have admitted that, until recently, the published refrigeration tariffs on California fruit represented merely the "maximum rate charged,"³ and that it was a general practice to grant rebates to shippers whenever necessary to secure their traffic. One Chicago fruit dealer's profit consisted of the difference between the published and actual refrigeration⁴ charge. Certain stock car lines have also occasionally paid

¹ Report of Commissioner of Corporations on Transportation of Petroleum, p. 83.

² Weld, p. 152.

³ G. B. Robbins, Interstate Commerce Commission Hearings, October, 1904, p. 67.

⁴ J. S. Watson, Interstate Commerce Commission Hearings, October, 1904, p. 24.

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rebates to shippers in order to stimulate the use of their cars.¹

Discriminations in the case of the tank car lines have occasionally appeared. For some years prior to 1901, for instance, the Southern Pacific had about 325 cars of the Union Tank Line Company for public use. In the summer ² of that year they were withdrawn from general commission, and there was widespread complaint because the railway for a long time did not provide sufficient cars for independent shippers. The Southern Pacific, moreover, gave more favorable treatment to the cars of the Union Tank Line than to other private tank cars. It hauled the cars of the former line subject to the line's exclusive use, but refused to handle independent tank cars under such restrictions. The Union Tank Line cars were given a mileage allowance of three-quarters of a cent, loaded and empty, while most independent refiners ³ received six mills on the loaded movement only, unless the haul exceeded eight hundred miles, in which case they received three-quarters of a cent, but only on loaded cars. Similar mileage discriminations were practiced by some of the northwestern transcontinental railroad companies.

The "commission contracts" above mentioned sometimes constitute a rebate. The Milwaukee Refrigerator Transit Company, for instance, is a subsidiary of the Pabst Brewing Company, and the commissions of 10 and 12½ per cent of the freight rate which it received were declared by the court ⁴ to be unlawful rebates. Similar commissions

¹ Midgley, Interstate Commerce Commission Hearings, October, 1904, p. 11.

² Report on Transportation of Petroleum, pp. 465-482.

³ *Ibid.*, p. 27.

142 Federal Reporter, 247.

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granted to car lines the owners of which are not themselves shippers do not, however, constitute rebating.

(5) The knowledge of their competitors' business in the case of car lines dealing in fruit or produce has been a further source of complaint. In the course of icing the cars, the car owner becomes aware of their destination, and such information is a valuable market asset. But as refrigerator car companies no longer deal extensively in such products the complaint has subsided.

(6) The private car company has at times influenced railway freight rates. For a number of years the difference between rates on oil in tank cars and oil in barrels was so great that the carriers' refusal to furnish tank cars to smaller shippers gave large shippers an unfair advantage.¹ The weight of barrels, moreover, was included in the tonnage, while that of the tank was excluded. The relatively low rates on dressed beef, as compared with live cattle, were unduly discriminatory; but they, as well as some of the anomalies in oil rates, were doubtless due more to the power of the large shippers than to the private car system. The favorable rate clause in the contracts between car lines and carriers is further evidence of the influence of the private car over the freight rate; but such contracts do not necessarily establish unreasonably low rates.

(7) Lastly, the position of the private car in car distribution has been a much-discussed question. It was especially important in the coal fields during the recent car shortage of 1906 and 1907, when the private car owner received his portion of the carriers' cars in addition to his own equipment. It was important also in the distribution of oil tank cars. It has since been definitely decided that,

¹ Fifth Annual Report Interstate Commerce Commission, 1891, pp. 35-38.

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while the owner is entitled to the use of his cars, they must be included as a part of the total commercial equipment.¹

IV. ARGUMENTS FAVORING THE PRIVATE CAR

There are at least four well-founded arguments in support of the use of private cars:

(1) As was above indicated, the origin of the private car system lay in the early need for special equipment and the refusal of the railway to provide it. In each of the three leading groups of private cars—the refrigerator, palace stock, and tank—requests were made of the carrier by the shippers, who were met by refusal. This argument relates largely to the past, and does not necessarily justify the retention of private cars; yet, even now, particularly in the case of refrigerator and tank cars, by no means all the carriers are ready to purchase the necessary equipment. In 1894, for example, the Union Tank Line, before opposing the reduction of the mileage allowance, offered to sell to the railways its entire equipment, and the offer was refused.

(2) A second argument favorable to certain classes of private cars is found in their great mobility. Fruit is a seasonal crop. The greater part ² of Michigan peaches moves in about six weeks of the autumn, and the railways of Michigan have not thus far seen fit to purchase refrigerators to handle the entire crop. But the Georgia crop is harvested mainly in the six weeks beginning with the middle of June, and the citrus fruit crop of California moves from the 1st of December to the 1st of May. The advantage of the private car company is that its equipment can be moved from

¹ R. R. Commission of Ohio *vs.* Hocking Valley Railway Company, XII I. C. C. Reps 398; Traer *vs.* Chicago and Alton, XIII I. C. C. Reps. 451.

² Eighteenth Annual Report Interstate Commerce Commission (1904), pp. 10-19.

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one fruit district to another, and therefore be utilized throughout the greater part of the year. In the live stock business likewise there are periods when the volume of business of certain carriers is abnormal. Then it is that the private cars are brought into use, and as the "overflow business" usually arises in one section as it subsides in another, the car company finds continuous employment for its cars. Shippers making periodical shipments of race horses, and exhibition live stock, likewise, find the private stock car highly useful. A vital difference exists between seasonal or otherwise irregular freight traffic and that which is regular throughout the year. The private car enables traffic of varying volume to be handled economically.

(3) The high-class service rendered by the private cars is a third point in their favor. Even in the fresh fruit traffic, though complaints against high icing charges have been frequent, the excellence of the service is quite generally acknowledged. Particularly when the car company operates under an exclusive contract, which binds it to handle all the fruit offered and enables it to build adequate icing stations, is the service generally commended.

(4) Lastly, the car companies point to the beneficial services they have rendered certain of the country's greatest industries. Before the private refrigerator car appeared in California, in 1888, only hardy varieties of fruit, such as pears, grapes, and prunes, could be extensively shipped to the eastern market. Though other factors are not to be overlooked, the refrigerator car practically made the great deciduous fruit industry of California, for it would otherwise have been confined to the local market. While much of the citrus fruit crop is shipped in ventilator cars¹ dur-

¹ Weld, p. 50.

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ing the cold season, over ninety per cent of the deciduous fruit is shipped in refrigerator cars during the summer months. The Georgia peach grower had the advantage of water shipment, but the private refrigerator car meant but little less to him than to the California grower. The Michigan grower had for some years been shipping vessel-loads of peaches to Chicago, Milwaukee, and other cities on Lake Michigan, but the refrigerator car enabled him to ship part of his crop eastward, to market it in far better condition and at a higher price; his acreage has increased and the value of his land has risen. The strawberry industry of Florida, the Carolinas, Arkansas, Tennessee, and Missouri, except on a local scale, has likewise been built up by the refrigerator car. While it may be said that it was the refrigerator car and not the private ownership that accomplished this good, it must be acknowledged that until recently there were few refrigerator cars other than those of the car lines.

A similar, though less widespread, effect was exerted upon vegetable culture. Truck farming districts, such as those of the Carolinas, Georgia, Florida, Tennessee, Missouri, Mississippi, Arkansas, Colorado, and California, dependent upon distant markets, make large use of the refrigerator car. About ninety per cent of the vegetables shipped eastward from California go under refrigeration. Lettuce, celery, cantaloupes, asparagus, and various other vegetables cannot be shipped to distant markets without loss of quality unless they are iced.

The widespread effect of the private refrigerator car in the packing industry is well known. Before its introduction, the usual practice was to ship the live cattle to the slaughtering and meat-packing centers of the East. The beef industry of the middle West as a whole was subordinate

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to pork packing, because cured pork was marketable and could be shipped without refrigeration, while cured beef was largely unmarketable. The packing trade, moreover, was mostly confined to the cold seasons when refrigeration could be dispensed with. The refrigerator car changed the entire industry. The cattle were more and more slaughtered in the West and fresh beef shipped to market, the live stock industry was able to spread out over a greater area, the packing business lost its seasonal feature and was developed into an immense industry; the fresh beef gradually exceeded the pork trade, and the large cities of the East were enabled to obtain a large portion of their daily meat supply directly from the West. Upon dairy products, eggs, and poultry raising, the refrigerator car has exercised a similar influence, but in this field the refrigeration has to a much greater extent been performed by the carriers in cars owned by themselves.

The private tank car has been an important factor in the oil industry. The tank car largely reduced the cost of transporting petroleum and permitted a great expansion of the production of oil. The small refiner has a grievance against the carrier who refuses to furnish tank cars rather than against the private tank car lines. The private coal car and palace stock car have worked in fields more nearly served by the carriers' equipment; but they too have been an appreciable force in the development of the industries which they serve.

V. PRESENT STATUS

During recent years, increasing numbers of special equipment cars have been purchased by the carriers. The number of refrigerator cars owned by them has increased from about 1,000 in 1885 to 27,954 in 1907. The field in which

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the carriers are particularly active with their own refrigeration cars is the dairy traffic, which is regular throughout the year. Various railways have also taken up the present vegetable traffic. The Atchison, Topeka & Santa Fé, through the Santa Fé Refrigerator Dispatch Company, operates about 6,000; the Harriman Lines, through the Pacific Fruit Express, operate about 6,600; the Gould Lines, 4,500, through the American Refrigerator Dispatch Company; and the New York Central Lines over 4,800, through the Merchants Despatch Transportation Company. The cars of the latter two are not, however, confined to the fruit and vegetable traffic. The Illinois Central and the Hill Lines are likewise prominent in this connection. The position of the carriers in the coal, manufacturing, and live stock traffic has always been paramount. It is only in the ownership of tank cars that the carriers have made little headway.

It does not follow, however, that the end of the private car is near; their number is slowly growing, and for some time there will continue to be special fields to which they are particularly adapted. It is noticeable that the carriers now operating their own fruit refrigerators are those which have a fairly regular traffic extending throughout the greater portion of the year. The legal status of private cars is now better defined than it has been in the past. The Hepburn Act of 1906 specifically places them within the jurisdiction of the Interstate Commerce Commission. Refrigeration charges are a part of the transportation charge, must be published and filed with the commission, and are subject to its regulation. In car distribution, the car owner is entitled to the use of his cars, but they are a part of the aggregate commercial equipment, the distribution of which, in interstate traffic, is subject to control by the commission.

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Rebating and unfair discrimination are prohibited in the Elkins and the Hepburn Acts. This legal supervision will doubtless protect the shipping public and the carrier against the former abuses connected with the use of private cars. The private car system is not inherently wrong; indeed, in certain fields of special equipment and irregular traffic, it performs a distinctly useful service. The paramount need has been its effective control rather than its abolition.

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CHAPTER XIII

FAST FREIGHT LINES, THEIR HISTORY AND PRESENT SERVICE

Through service prior to organization of fast freight lines—Rise of fast freight lines—The Star Union and Empire lines—Contract relations of private fast freight lines and railroad companies—Present-day *coöperative* and *company* fast freight lines—Star Union, Pacific Express, and Merchants Despatch lines—Present financial arrangements between fast freight lines and the railroads—Conclusion—References.

I. THROUGH SERVICE PRIOR TO THEIR ORGANIZATION

ONE of the most urgent problems early confronting railroad companies and shippers was the rapid handling of through traffic. There was in fact no "through traffic" as it is known at present. The railway network consisted of a large number of small independent carriers each of which confined itself to the handling of freight from one point to another on its own line. On shipping freight to distant points, each link in the route of independent lines became a separate receiving company. The railways took receipts from each other upon delivery to each other. Bills of lading were, as a rule, issued only to the end of the individual railroads. In a few exceptional cases through bills were issued; but, as a witness stated before the New York Investigating Committee in 1879, they were so "hedged in and surrounded by limitations as to the liability of each railroad" that in the event of loss, damage or

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overcharge, the shipper was obliged to seek redress from the particular line on which the offense was committed. Cars, moreover, both because of the danger of not having them returned and because of the difference in track gauge, were not interchanged; and cargoes were transferred from car to car at the end of each separate line.


The difficulty and delay involved in the handling of through freight soon resulted in the organization of numerous "forwarding firms." Such, for instance, were the early firms of Leech & Company, Clark & Company, Borbridge & Company, operating between Philadelphia and Pittsburg. Firms had agencies at the points where freight was transferred from car to car and at the principal cities. They made special arrangements with railroads, canals, steamboat companies, and wagon lines so as to get continuous routes between distant points. They contracted for through rates and frequently issued their own through bills of lading. They saw that their customers' freight was taken from consignor to consignee over the myriad of transportation lines, and the shipper paid them a stipulated price for the service. Some of them were commission merchants as well as forwarders, receiving produce, forwarding it to markets and selling it on commission.

The service rendered by these firms was usually efficient and they did much to facilitate through shipments. But it soon appeared that, in spite of anything they might do to develop business arrangements, there could be no solution of the through freight problem unless cars were run from consignor to consignee without breaking bulk at the end of each receiving railway. Not only did the carriers refuse to have their equipment pass beyond their lines, but the difference in gauge made it impossible for the prevailing type of car to do so.

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II. RISE AND ORGANIZATION OF PRIVATE FAST FREIGHT LINES

To diminish the delay and damage resulting from the transshipment of goods, through routing became a public necessity. As a result, separate and independent car companies, known as fast freight lines, were organized to handle through traffic. These companies made contracts with the carriers so as to obtain a continuous line between distant points, and they had their own cars. Many of their cars were equipped with adjustable trucks or wide tire wheels so as to be suited to different gauges.¹ The first private fast freight line was Kassan's Dispatch,² organized in 1855 or 1856; the Great Western Dispatch was organized in 1857; the Western Insurance & Transportation Company (Star Union Line) was incorporated in 1856 and organized in 1863; and many others followed.

The organization and working of the Star Union Line may be regarded as typical. In 1856 it was incorporated as the Western Insurance & Transportation Company, and in 1863 was organized as the Union Insurance & Transportation Company. The well-known legend  Union Line was adopted as its emblem and popular name. It purchased fifty-five cars from the Little Miami Railroad and handled its first freight in February, 1864. Not only did it provide a through route between the East and middle West, but it insured the time of goods in transit. An additional twenty-five cents per 100 pounds on dry goods, for instance, was charged between Chicago and New York to insure five days' transit. Difficulties arising from this


¹ "Report of Joint Special Committee to Investigate the Vermont Central Railroad Management," p. 46, 1873.

² L. D. H. Weld, "Private Freight Cars and American Railways." Columbia Univ. Studies in Political Science, vol. xxxi, No. 1, 1908, p. 76.

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practice and from the claim that the insurance covered also the safety of the freight, resulted in the abolition of the insurance feature in 1865, and a change in the company's name to Union Railroad & Transportation Company.


Aside from the ownership of cars, the nature of the Star Union Line is seen in its varied activities. It established car floats between Jersey City and New York in 1866; it had its corps of freight solicitors at appropriate points to induce merchants to ship their freight in Star Union Line cars and to take charge of the shipments; and it also carried mail for the Federal Government. Gradually, however, the Pennsylvania Railroad Company acquired control of the roads over which the Star Union Line operated, and the Pennsylvania Company was organized to manage the western lines. As a result there was no longer any need for a private fast freight line to handle through business, and the Pennsylvania Railroad Company served notice that the contracts would be terminated. Thereupon the Star Union Line offered to sell all its properties, good will and rights to the Pennsylvania Company.¹ The transfer was made in 1873 for 60,000 shares of common stock of the Pennsylvania Company, "and the Star Union Line as a distinct freight company ceased to exist, although the line has been perpetuated and continues its functions as the recognized through freight line of the Pennsylvania Railroad system between the East and the West."

The Empire Transportation Company, known as the  Empire Line, is another typical fast freight line which in its early stages was a private company. This company is particularly interesting because of its varied activities. It was organized in 1865 primarily to develop

¹ Cf. Twenty-sixth Annual Report of the Pennsylvania Railroad, 1873, p. 31.

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the traffic over the Philadelphia & Erie Railroad. It, however, made contracts with other carriers and soon obtained a through route from New York to Chicago. To handle the oil traffic in and around Oil City, Pennsylvania, it organized the "Green Line" to operate its tank cars. It also acquired various oil pipe lines soon after that method of transportation proved feasible. In 1866 it purchased a controlling interest in the Titusville Pipe Company; in 1872 it purchased the entire property of the Mutual Pipe Line Company, and of the Union Pipe Company; in 1873 it constructed the Butler Pipe Line; and in 1875 the Olean Pipe Line. At the time the Empire Transportation Company was purchased by the Pennsylvania Railroad, it operated over four hundred miles of pipe lines.

The Empire Line, moreover, constructed extensive terminal facilities to handle its traffic; it operated river floats at New York and a number of grain elevators at its seaboard termini. To extend its service on the Great Lakes it organized the Erie & Western Transportation Company, commonly spoken of as the  "Anchor Line," and thus operated a fleet of freight and passenger steamers. As in the case of the Star Union Line, however, its work as an independent company was made unnecessary by the consolidation of railroads, and in 1877 it was purchased by the Pennsylvania Railroad Company.

The arrangements of the private fast freight lines with the railways were various. The Star Union Line, for example, had a contract with the Pennsylvania Railroad providing for the payment of a fixed sum per car each six months. The freight rates were collected by the Star Union Line, while the railroad, regardless of lading, received \$72 per car between December 1st and May 1st for hauling

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cars from Pittsburg to Philadelphia and Baltimore. During the remainder of the year these payments were \$56 and \$45 to these cities respectively. Likewise, from New York to Pittsburg, between December 1st and May 1st, the Star Union Line paid \$110 per car, and from Philadelphia and Baltimore \$75, while during the remainder of the year the payments to Pittsburg were \$100 from New York, and \$65 from the other cities.

West of Pittsburg there was a different arrangement. Here a percentage arrangement prevailed, fixing the payments for certain weights on the basis of a total weight of 16,000 pounds. The freight line received not only the difference between the payments it made to the railroads and the freight charges it collected, but also mileage from the railroads at the rate of two cents per mile.

Omitting exceptional contracts, the financial arrangements between the private freight lines and railways passed through two stages. In the first period the prevailing method was that a fixed sum per car hauled was paid by the freight line to the carrier, while the freight line received the freight charges from the shipper and mileage from the carrier. In the second stage, the freight line made no payment to the railway, but was paid in various ways for the use of its cars and the solicitation of business. The principal method of payment was a percentage of the freight rate, and the lines came to be known as "commission lines." On westward traffic the commissions ranged from fifteen per cent on the first three classes of freight, ten per cent on the fourth class, and eight per cent on specials, down to ten per cent on the first three classes, and five per cent on the fourth class and specials. On east-bound traffic they usually were twelve per cent on the first three classes, ten per cent on the fourth class, and eight

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per cent on specials. Other roads settled on a mileage basis. The Vermont Central, for example, and all other lines over which the "National Dispatch" operated, except the Michigan Central (which paid two cents), paid to this line a mileage of first three, and then two and one half cents per car mile. Still others paid the freight lines a fixed per diem allowance. The United States Rolling Stock Company, for instance, received seventy-five cents per day for three hundred days per year, and repairs were made by the carriers.

While many of these early private freight lines fulfilled a much-needed service, complaint arose that in some cases they unduly diverted profits from the stockholders of the railroads. The bitterest opposition appeared in the case of those freight lines whose stockholders consisted largely of railway officials. In the case of the National Car Company or "National Dispatch" and the Vermont Iron & Car Company, for example, it was admitted, when the Vermont legislature investigated the companies, that their stocks were largely held by officials of the Vermont Central, Vermont & Canada, Grand Trunk, Boston & Lowell, and other railways. At times, the cars of these freight lines were given preference over those of the Vermont Central. Their cars were built in the car works of the Vermont Central, and often sold at but little more than the cost of construction. The National Car Company paid first ten per cent and then twelve per cent dividends on the par value of its stock, and the Vermont Iron & Car Company paid ten per cent, while the Vermont Central Railroad was in the hands of a receiver.

Partly because of such abuses, but more generally because of the consolidation of the railways into extensive systems which made independent freight lines unnecessary,

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the movement on the part of the railways to purchase the lines gained ground so rapidly that, by 1875, they had almost entirely disappeared.

III. PRESENT-DAY FREIGHT LINES

The rapid disappearance of the private fast freight companies was the signal for new forms of freight lines. There are at present two general types: *coöperative* and *company*. The coöperative lines made their appearance even before the private lines had largely disappeared, as, for example, the "Purple Line," "Orange Line," "Planet Line," "Blue," "Red," and "White" lines. The usual arrangement was, and still is, for each road interested to contribute a portion of the equipment, the total earnings being prorated among the members, just as in the case of interline freight shipped without the medium of a freight line. A board of managers, consisting of an official from each railway interested, selects a general manager and his assistants. Agents are then located at the leading terminals to solicit business, and all the freight they succeed in getting is consigned over the particular route represented by the coöperative line. The only cost to the participating carriers is the actual expense involved; the entire profit goes to them just as though no freight line had been organized. Coöperative freight lines, in fact, have no earnings separate from those of the carriers interested. A contract with such a line means a contract with the parent railways. Coöperative lines are merely through routes so organized as to consign interline traffic over the railways interested. Typical examples of coöperative lines are the White Line, Traders Dispatch, Lackawanna-Grand Trunk, Lehigh and Wabash Dispatch, and various others.

With the further consolidation of the railways, even

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the coöperative lines have lost ground; but instead of the fast freight line being wholly abandoned, *company freight lines* have, in many instances, been given the place of their predecessors. There are in general two subtypes of company freight lines, those which really consist of little more than departments or bureaus of a railway, and those which are companies controlled by the carrier, but with separate identity. In a sense, many of these freight lines are also coöperative, but they differ from the purely coöperative lines in that, wherever more than one railway is interested, the railways are affiliated so as to constitute really a single large system.

Of the bureau type of company freight lines, numerous illustrations may be cited, and their organization is not always identical. The Star Union Line, for instance, is still coöperative in the sense that the Pennsylvania system east and west of Pittsburg is interested. But when, in 1873, it was purchased by the Pennsylvania Company, it lost its separate identity and became a sort of bureau or agency with few expenses and no earnings of its own. It is practically an accounting bureau for the through freight over the Pennsylvania system. The Auditor of the Union Line is virtually the Manager of a clearing house supervised by a board of control, which consists of himself and the Comptrollers of the Pennsylvania system east and west of Pittsburg. In addition to this it has, however, not lost its functions as a freight line. It has agents located at different points to solicit traffic. Such agents are directed by the Manager and Superintendents of the Star Union Line, but are in reality employees of the Pennsylvania system. The soliciting is done through the Star Union Line, for it represents to the shipper a definite through route. It acts as a trade-mark, the use of which tells the shipper exactly

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how his goods will be routed. A certain good will, likewise, is attached to it as to any well-established trade-mark.

The Pacific Fruit Express Company is another company freight line of the bureau type, but it is organized in a somewhat different manner. It is a corporation that was formed in 1906 by the Harriman Lines for the definite purpose of handling the fruit business. It is spoken of as a refrigerator line, though in reality it is but a separate department of the Union Pacific Railway. The 6,600 refrigerator cars which the Harriman Lines ordered in 1906 were turned over to this department instead of to the traffic department. The reasons for the formation of a separate company were that the traffic department, it was thought, could not devote sufficient time and study to the necessary special service required in the movement of fruit, and that an extra corps of men was needed to ice the cars, locate the icing stations, and supervise the refrigerator service generally.

The Merchants Despatch Transportation Company (M. D. T.) may be cited as an example of the second form of company freight line. It is a separate company, but its stock is owned by the New York Central Lines. It owns about 6,000 cars, has agents located at numerous large cities to solicit freight, and to see to the icing of the refrigerator cars billed under its care. Very similar to this is the American Refrigerator Transit Company (A. R. T.), which is a separate corporation, but is subsidiary to the Wabash, Iron Mountain, and Missouri Pacific railways. It owns 4,500 cars and operates them on these roads, solicits freight and ices its refrigerator cars. The Santa Fé Refrigerator Dispatch is also a company freight line, but is so closely subsidiary to the Atchison, Topeka & Santa Fé Railroad that it is sometimes regarded merely as a depart-

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ment of the railway. Instead of owning its equipment, it leases about 6,000 refrigerator cars from the Atchison, paying five per cent of their value annually for their use. Its earnings come from the refrigeration charges and the mileage which it receives from the foreign railways over which the cars are consigned.

IV. PRESENT FINANCIAL ARRANGEMENTS BETWEEN RAILWAYS AND FAST FREIGHT LINES

Such are the two general types of fast freight lines employed at the present time. There are numerous variations from the types, ranging from those which merely signify a through route to those owning equipment and operating as subsidiary corporations. It naturally follows that the financial arrangements between the freight lines and the railways are even more variable than the types of lines. In the case of the coöperative organization, it is chiefly a matter of prorating the earnings. The number of cars which each railway furnishes is first arranged, and then the members agree upon the portion of the through rate which each shall receive. The earnings never reach the freight line, but are collected by the receiving or delivering railway, and are prorated in the usual manner. Whatever expenses are incurred by the freight line are likewise prorated between the interested carriers. In the case of company lines that are merely bureaus or departments, the situation is similar, the lines being frequently only co-operative arrangements between the affiliated roads of a great system.

The usual agreement made by the company freight lines which own cars is in the form of a contract with the controlling railways. Compensation is usually made in the form of mileage and the payment of a commission on the

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freight rate. This type of organization is in fact, even now, sometimes called a "Commission Line." The contract of the Santa Fé Refrigerator Dispatch is peculiar in that the freight line receives neither mileage nor commission from the parent road, but pays to the railway five per cent of the value of the cars which it has leased, and also pays for all the repairs, expenses of operation and other outlays, out of the earnings from the icing service and the mileage paid by foreign roads.

The financial arrangements with foreign railways over which the freight line cars are consigned are as yet unsettled. All such cars are really railway equipment, and yet the code of per diem rules is not in every case applied to them. The Santa Fé Refrigerator Dispatch, Merchants Despatch, and American Refrigerator Transit Company collect mileage from foreign roads in the same way that private car companies do. The American Refrigerator Transit Company, moreover, in some instances receives commissions of 12½, or ten per cent of the freight rate from foreign carriers. Some of the eastern roads such as the Pennsylvania, Erie, and Baltimore & Ohio, have applied an optional rule. They have given their connecting lines the choice of paying either per diem or mileage according as in each instance the one or the other is found the cheaper.

In conclusion, it may be noted that the term "fast freight line" is in most cases misleading. Some of the lines are refrigerator companies and in reality handle fast freight. Fast freight lines should, however, be distinguished from the fast freight arrangements which the railways are making to handle high-class and perishable goods. "Time" and "preference" freight services are very different from the fast freight *lines* which received their

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popular name in the early sixties, when the lack of through routes was the greatest hindrance to rapid transportation. The present functions of the lines as freight solicitors, trade-marks, accounting bureaus, and in some cases as car owners and refrigerator agencies, have little to do with "fast freight." A fast freight line solicits all kinds of through freight, even grain, hay, and lumber, as well as freight that is carried on fast trains or on schedule time.

It is in the region tributary to the Atlantic coast ports that the fast freight lines are most numerous. In 1905 as many as eighty-four offered through routes from the West and South to these ports. Their large number is due chiefly to the fact that through shipments to these ports from the West or South must usually pass over several different carriers. The Atlantic ports, moreover, lead in the export business and many of the fast freight lines act as special agencies for supplying through routes to foreign destinations. Relatively few freight lines terminate at either the Gulf or Pacific coast ports, for the reason that, while freight shipments often pass over more than one company's tracks, the number of carriers is ordinarily not great enough, nor is the situation so complicated as to create a need for numerous freight lines. One of the most significant recent events in connection with freight lines is the action taken by the Atchison and Harriman lines. When they undertook the fruit refrigeration service they deemed it wise to organize freight lines similar to some of those favored by the roads in eastern territory.

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3. Report of Windom Committee, Senate Doc., 43 Cong., 1 Sess., No. 307.

4. L. D. H. Weld, "Private Freight Cars and American Railways," New York, 1908.

5. Hearings before the Interstate Commerce Commission on "The Transportation of Freights by Common Carriers in Cars Not Owned by Said Common Carriers," 1904.

6. Hearings before the Committee on Interstate Commerce of the U. S. Senate on "Regulation of Railway Rates," Senate Doc., 59 Cong., 1 Sess., No. 243.

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10. "Report of the Special Committee on Railroads to Investigate Alleged Abuses in the Management of Railroads Chartered by the State of New York, 1879," Albany, N. Y., 1880.

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CHAPTER XIV

TIME AND PREFERENCE FREIGHT

Definition of time and preference freight—Red-ball freight and billing—Frisco Red- and Green-ball freight and billing—Erie Railroad Manifest freight and billing—Pennsylvania Railroad Preference freight—Office methods of controlling movement of time freight—References.

MOST of the leading railroads have, within recent years, adopted methods for moving certain kinds of freight more rapidly than others. Such freight is usually known as "time freight," but sometimes as "preference" or "fast" freight. It is usually carried on special freight trains moving at the rate of about twenty miles per hour as contrasted with a speed of twelve miles per hour for ordinary freight. Railways advertise freight trains running from New York to Chicago in fifty-seven or sixty hours. Such trains move on schedule time, and their tonnage is about thirty per cent less than that of slow freight trains. In order to comply with the state statutes which usually require that live stock shall be transported at the rate of eighteen or more miles per hour, and that the animals shall be unloaded for food and rest at the end of a given number of hours, special live stock trains are regularly run.

Many special arrangements have been made to facilitate the movement of "time freight." Frequently advance notices are sent to consignees telling them when to expect a shipment of specified quantities and classes of freight.

TIME AND PREFERENCE FREIGHT

More frequently the local agent is notified in advance. Some roads have made standing offers that when any station attains a daily average¹ of, say, 10,000 pounds of certain kinds of freight, a through car will be put on. Some lines have adopted a special billing arrangement; others have retained the usual billing but have supplemented it with special forms and telegraphic reports.

"Time freight" has particular reference to the various freight billing methods which numerous railways have adopted. The most distinctive are the "Red Ball," the "Red and Green Ball," the Erie "Manifest," and the "Preference" freight systems.

I. RED-BALL FREIGHT

The red-ball freight of the Atchison, Topeka & Santa Fé is typical. On some parts of the system it has been handled since 1892, and it is now in use upon all the lines of the company. It is limited to specified classes of freight and general merchandise.² Unless by special order or to "fill up" the train's tonnage rating, no dead freight, such as lumber, coal, cotton, or wheat, is shipped with red-ball freight.

Commodities can be billed as red-ball freight only from certain designated stations. The Atchison has about ninety red-ball stations, and all other stations desiring to utilize the time freight arrangements are obliged to forward their freight on local trains to the nearest red-ball station, where it is given red-ball billing. Each red-ball station is assigned a letter or letters and a series of numbers, ranging from 1 to 20 in the case of the smallest, to 1 to 900 in the case of the

¹ Delaware, Lackawanna & Western Fast Freight Arrangements, *Railroad Gazette*, vol. xlii, Feb. 15, 1907, p. 212.

² *Railroad Gazette*, vol. xxxix, Aug. 25, 1905, p. 184.

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largest stations, according to the number of loaded cars usually forwarded. These letters and numbers used consecutively constitute the symbols employed in forms and telegraphic reports.

01-7-05-10-0200

(From 120 Standard.)

SANTA FE.

RED BALL FREIGHT

THIS CAR MUST BE KEPT IN

TRAIN

CARDING STATION

29

WEIGHT OF CAR AND LOAD

WEIGHT OF CAR AND LOAD
IN TONS.

When practicable use weight shown herein and ~~use~~ attaching Tonnage Card Form 802 Standard.

**THIS CAR MUST NOT BE DELAYED EXCEPT ON
ACCOUNT OF BEING IN BAD ORDER.**

FORM 1.

Goods and merchandise entitled to the red-ball billing are forwarded upon the red-ball trains, run on schedule

Use Black Ink in Issuing Red Ball Cards and Envelopes.
FORM 1842. STANDARD.

Santa Fe

Way-bill No. R. R.

RED BALL FREIGHT

Initials _____ Car No. _____

Transferred to _____ Car No. _____

At _____ Date _____ 190 _____

From _____

To _____

Final Destination _____

Routing _____ R. R.

Contents _____

Consignee _____

Consignor _____ Weigh at _____

Stop Car at _____ For _____

Train No _____ Symbol Letter _____

Forwarding Station Symbol letter and No. _____

WEIGHTS AS BILLED.

In this space Billing Agent will enter weight of car (tare), weight of load and total.

Of Car _____

Of Contents _____

Total _____

SCALE WEIGHT AT

Gross _____

Tare _____

Net _____

REFERENCE TO
REGULAR WAY-BILL.

Date _____ 190 ____ No. _____
Station from _____
Reported _____ Week _____ 190 ____

Stated Refrigeration _____

SPECIAL INSTRUCTIONS

READ INSTRUCTIONS ON OTHER SIDE

FORM 2. [Over]

Agent will enter on blank below if any SPECIAL INSTRUCTIONS following Car, such as stopping for icing, etc.

KEY To Symbols	Index	Symbol																											
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

(IMPORTANT INSTRUCTIONS. READ THIS)

- 1 This envelope will be used in the forwarding of each car, whether loaded or empty, when handled as Red Ball freight.
- 2 When cars loaded with Red Ball freight are accompanied by the regular Way-bills, all the Way-bills for that car must be enclosed in one of these envelopes. These envelopes will be used in the place of Card Way-bills (Form 1055 Standard) and Red Ball Card Way-bill (Form 1049 A Standard) by Agents designated by the Freight Auditor, and when so used will be handled in accordance with his instructions.
- 3 Each envelope must bear the symbol letter of the train in which it is traveling. Trains handling Red Ball freight will carry symbol letter from starting point, according to key shown at top of this envelope. Each envelope must also bear proper symbol letter and number from forwarding station.
- 4 The freight covered by the Red Ball envelope must not be delayed, except on account of bad order.
- 5 After it has been delayed once, freight cars must not be taken to see that it is not delayed again so route.
- 6 Whenever it becomes necessary to set out this car, on account of an engine breakdown or yard accident, the Agent must promptly advise the Freight Auditor by "track out car" report, Form 1253.
- 7 When track scale weight is obtained in transit, and is entered on face of this envelope, the Agent at destination, or at junction if Way-bill is made to a point beyond,

CONDUCTORS ARE POSITIVELY PROHIBITED FROM MOVING ANY CAR OF RED BALL FREIGHT WITHOUT IT IS COVERED BY A RED ENVELOPE OR RED CARD WAY BILL.

8 IN MAKING THIS RED BALL ENVELOPE USE INK IN ALL CASES. PENCIL - INDELIBLE OR COMMON. MUST NOT BE USED.

258.

TIME AND PREFERENCE FREIGHT

time. On each side of every car containing red-ball freight a so-called *destination card* is tacked, containing a red circle, six or seven inches in diameter, within which is the number of the train of which the car is a part (Form 1). This red disk is easily seen by all the yard employees, and indicates to them the nature of the freight in the car and the train by which it must be forwarded. For each car the train conductor has a *red-ball freight envelope* (Form 2) of conspicuous red color and with spaces on the front for the

[illegible]

INSTRUCTIONS.—This consist report to be made up from information shown on face of red envelopes before each train handling Red Ball freight leaves the station and to show only such cars as are handled as Red Ball. Operators must telegraph this report within one hour after train has left station.

FORM 3

Superintendent of Transportation.

initials and number of the car, its contents, instructions for routing, number and symbol of the train, symbol and serial numbers of the station, weight of the car, and reference to the way-bills which are placed in the envelope. On the back of the envelope are spaces for recording the car's movement.

As soon as possible after the red-ball train has departed the agent makes out a *consist report* (Form 3), which states

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the symbol letters and numbers of each car in the train, its contents, consignee, and destination. These data are transmitted by telegraph to the Red Ball office where the records and train board are kept. At the close of each day the station agent also makes out a *daily report of red-ball loads*

SD-10-10-100

(Form 1 1000 Standard) SANTA FE.

(Print name of Railway Company)

20 REPORT.	Number	Loading Operator	Unloading Operator	Year	Month	Day
------------	--------	------------------	--------------------	------	-------	-----

DAILY REPORT OF RED BALL LOADS DELAYED.

Agent's No. _____ From Station "A" _____, Date _____

GENERAL SUPERINTENDENT.

Following cars of Red Ball freight have been delayed waiting movement:

IF DELAYED BY STATION		IF DELAYED BY TRAIN		IF DELAYED BY ROAD		IF DELAYED BY OTHER		DATE AND TIME ARRIVED		DATE AND TIME DEPARTED		REMARKS
Initial	Number	Initial	Number	Initial	Number	Initial	Number	Day	Time	Day	Time	
" "	" "	" "	" "	" "	" "	" "	" "	These Columns will not be Used.				" "

Instructions.—Agents will make this report up properly at the close of each day, and file with operators for transmission, making a copy by the passenger train. It must include all Red Ball cars on track that were ready to go prior to the departure of Red Ball trains upon which they could have been moved.

FORM 4.

delayed (Form 4), stating the number of red-ball cars that failed to be moved on their assigned train. As the red-ball train proceeds, the agents at the red-ball stations make out their *passing reports* (Form 5), from which the train and station symbols and serial numbers are wired to the Red Ball office, informing it of the train's progress.

If for any reason a car is "set-out," a *set-out report* (Form 6) is utilized. It is green in color and mucilaged on the back at the top, so that it may be pasted on the face of the red-ball envelope and in that way indicate to all that the car has been set out and must not again be delayed, except

Sending Operator	Receiving Operator	Date and Time Filed	Date & Time Sent
		M.	M.

Date "B" _____ 190__.

[illegible]

Cause of Delay "Q"

Agent or Yardmaster.

INSTRUCTIONS.—This report to be made by Agents or Yardmasters at designated Stations and telegraphed to General Superintendent immediately after the cars have departed. In making up the report use the lowest and highest Symbol numbers with letter shown on the "Red Rail Freight" Envelope. Make separate entries when break occurs in consecutive order.

Santa Fe.

SET OUT CAR.

21 REPORT.

"B"

From Station "A" _____ Date _____

To GENERAL SUPT. _____

[Give here Symbol Letter and Number shown on Red Envelope.]

Car bearing Symbol "C" _____

Set out at "D" _____

By Train No. "F" _____ Train Symbol "G" _____

Time "J" _____

On account of "K" _____

Position _____

INSTRUCTIONS. IMPORTANT. READ THIS.

If for any cause a car loaded with Red Ball freight is set out, one of these "Set Out Car" forms must be properly filled out by the Conductor when car is set out between terminals and attached securely to the face of the Envelope containing the Way-bills for this car. This form must remain with proper Envelope until it reaches destination.

Conductors must leave these "Set Out Car" forms with Telegraph Operator who will telegraph above information to General Superintendent, and then turn this form attached to Envelope over to proper party.

This car must not be again delayed except account Bad Order. Yardmasters and Conductors must see that this rule is absolutely enforced.

Train Symbol is shown on face of Red Envelope.

Yardmasters who take cars of Red Ball freight out of its regular train for any cause and hold them for another train, thereby forcing a delay, must attach one of these "Set Out Car" reports properly filled out to the Envelope for each car so delayed and make proper report of it to General Superintendent on Form 1323.

Operators will use Symbol Letters shown hereon in transmitting this report.

FORM 6.

Santa Fe.

Report of Arrival.		Destination.	
Sending Operator	Receiving Operator	Time Filed	Time Sent
		M.	M.

25 REPORT.

GENERAL SUPT.,

From "A"

Date "B" _____ 12

Freight with Way-bills carrying following Symbol Letters and Numbers arrived this station at time and date given below :

By

Conductor.

[illegible]

Agent or Yardmaster.

INSTRUCTIONS.—Agents or Yardmasters at destination of cars will make out this report immediately on arrival of cars of "Red Ball Freight" traveling under symbol letters and numbers and telegraph it to General Supt. Agents at junction points where cars leave this Company's rail, or at junction points with any branch line who receive any cars being handled as Red Ball will make out this report showing arrival of all such cars at their station.

In making up this report use the lowest and highest symbol number with letters shown on the "Red Ball Freight" envelope. Make separate entries when breaks occur in consecutive order.

Train Symbol is shown on face of Red Envelope.

2025-11-05-15:14-0000



TIME AND PREFERENCE FREIGHT

for bad order. After the set-out car has been again forwarded a *delayed cars forwarded report* (Form 7) is made out and wired to the Red Ball office. Finally, when the car arrives at its destination the agent, from the red-ball envelope, makes an *arrival or destination report* (Form 8). Various special postal card forms have also been devised to carry on correspondence between consignee, station agent, and superintendent in case it becomes necessary to trace a shipment.

This system of billing exists on various other railways, but each has its own variations. The Rock Island¹ red-ball freight includes "Asiatic freight, freight destined to or from the Pacific coast, El Paso, or south of El Paso; all perishable freight; all freight in refrigerator cars under ice; all freight in bond; and mixed lots of merchandise." The methods are very similar to those of the Santa Fé.

Great Northern² time freight is not spoken of as red-ball freight, but the forwarding arrangements are almost identical. Traffic is limited to one train daily in each direction, starting at St. Paul and Seattle, and includes perishable goods, products liable to freezing, less-than-car-load merchandise, freight from the East to Montana and points west, freight from the Canadian Pacific and Canadian Northern, freight from the East to competitive points in Minnesota, North Dakota, Iowa, South Dakota, and Nebraska, east-bound freight, except forest products and grain, from points west of Havre, and 180 other specified commodities. Other freight may be shipped as time freight by special permission of the Superintendent of Car Service.

Southern Railway³ time freight, known as "manifest" freight, includes perishable products, merchandise, ma-

¹ Dewsnap, "Railway Organization and Working," p. 458.

² *Railroad Gazette*, vol. xxxix, Sept. 8, 1905, p. 222.

³ *Ibid.*, Sept. 29, 1905, p. 300.

THE FREIGHT SERVICE

chinery, live stock, and other specified articles. It differs chiefly from the arrangements above outlined in that, while it nominally provides but a single class of time freight, it actually places perishable freight in a separate class. Provision is made for a form known as the *special record of movement of perishable freight*.

The Chicago & Northwestern Railway's time freight arrangements cover about 161 articles of a perishable, high-class, or otherwise urgent nature.¹ It is not called a red-ball system, but in its main essentials is similar. Time freight is shipped on special freight trains, and is billed only from certain designated "time freight billing stations." The forms used are similar to those of the Atchison and Rock Island, with a few differences. The usual red-ball envelope is not used, because waybills of distinctive color are considered sufficiently explicit. Red-card waybills are used in case the special waybill has not been made out.

II. FRISCO RED AND GREEN BALL TIME FREIGHT

Another method of forwarding time freight is the Red and Green Ball System of the St. Louis & San Francisco Railway.² Its distinctive feature is the division of time freight into two classes—red-ball freight, which includes perishable articles, all car-load lots of package merchandise, and seventeen other specified items; and green-ball freight, which applies to more articles and includes 109 specified commodities. Red-ball freight is given preference over all

¹ *Railroad Gazette*, vol. xxxix, Sept. 1, 1905, p. 208. "Instructions Governing Movement of Time Freight," Aug. 1, 1905.

² "Revised Instructions Governing the Handling of Red and Green Ball Freight," Dec. 15, 1906, and April 21, 1909. Joint Circular of Accounting Dept. No. N-99, and Supt. Transp. Dept. No. 3. *Railroad Gazette*, vol. xxxix, Aug. 18, 1905, p. 158; *Railroad Age Gazette*, vol. xlv, Oct. 29, 1909, p. 799.

TIME AND PREFERENCE FREIGHT

other freight, while green-ball freight precedes ordinary freight. There are sixty-six red and green ball stations, and they are given symbol letters and serial numbers, as in the case of the Santa Fé red-ball system. From one to five trains in each of the nine operating groups are set aside to carry time freight, and all trains in the same group are designated by a single train number.

The operating forms are similar to those used in shipping red-ball freight on the Atchison and Rock Island, with modifications to meet the double classification. Red disk-shaped cards are attached to red-ball cars and green ones to green-ball cars. To distinguish the billing of time freight from that of ordinary freight three special waybill envelopes are used. One, pink in color, is used for red-ball waybills; another is green, and used for green-ball waybills; while a red envelope is used for card waybills, which may be issued only for fresh meat, packing-house products, fruit, and vegetables. Special waybills are used, colored respectively, red and green. The Frisco System has the usual "consist," "passing," "set-out," "delayed cars," "forwarded," and "arrival" reports. Once each month a permanent report is made by the agent of each red and green ball station, giving a complete record of all time freight handled during the preceding month. The system is operated from the office of the Superintendent of Car Service, who alone traces car-load shipments, and thus avoids duplication of department work.

The most recent addition to the Frisco red and green ball system is the adoption of the so-called "Merchandise Scheme."¹ Ordinarily merchandise or package freight is

¹ Letters of Superintendent of Transportation of Frisco Lines, July 7 and July 21, 1909. Frisco Circular No. 4 of July 15, 1907. *Railroad Age Gazette*, vol. xlvii, Oct. 29, 1909, p. 799.

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included in the regular red-ball or manifest freight scheme of a railway. In order to supervise especially such freight, the St. Louis & San Francisco Railroad modifies the usual red-ball arrangement. Agents are ordered to mark and tag each article or package so as to show plainly the name of the consignee and the destination of the shipment. Special care is taken to make as many straight cars as possible, and the schedule for peddler cars is so adjusted as to concentrate the freight for any one station in one car.

To secure a check on the handling of merchandise cars the usual red-ball disk is displaced by a special *fast mer-*

FORM 9-4

FORM 970

THIS CAR MUST NOT BE DELAYED EXCEPT ON ACCOUNT OF BEING IN BAD ORDER



FAST MERCHANDISE

BROADWAY STATION SCHEDULE CAR-SYMBOL X

Car Initials _____ No. _____ Date Carried _____ To _____ Destination _____ Weight of Car and Load _____

THIS CARD MUST BE DETACHED AT FINAL DESTINATION

FORM 9.

chandise card (Form 9), attached to each side door of the car. A special fast merchandise red-ball *waybill envelope* (Form 10) is used. A *transfer station report* (Form 11) is added to the usual red-ball forms, which enables the tracing of a less than car load shipment from a large mer-

USE FOR MERCHANDISE ONLY.



Fast Merchandise Red Ball Freight

WAY-BILL ENVELOPE

CAR NO. _____ INITIALS _____

TRANSFERRED TO NO. _____ INITIAL _____

AT _____ DATE _____ 19__

FROM _____

TO _____

(Breaking Station.)

FINAL DESTINATION _____

TRAIN NO. _____ TRAIN SYMBOL _____

FORWARDING STATION SYMBOL LETTER AND NUMBER _____

WEIGHT.

GROSS _____ TONS, TARE _____ TONS, NET _____ TONS.

INSTRUCTIONS.

Conductors are positively prohibited from moving a car of merchandise unless the Reverse Way-Bills covering are in this envelope, and blank spaces properly filled in.

When Merchandise Schedule Red Ball Freight is received from connecting lines on way-bills of foreign line issue, Agents will fill out one of these envelopes and enclose the foreign way-bills, securely fastened together, making separate envelope for each car.

When more than one way-bill for a car containing Merchandise Schedule Red Ball Freight, all the way-bills must be securely fastened together and enclosed in this envelope.

Originating Agents must carefully fill in all the blank spaces.

Conductors and Yard Clerks must check the way-bills in this envelope with the Agent's endorsement and know that they agree before leaving a station or yard.

Originating Agents must keep an impression copy of envelope to assist in locating errors.

The freight covered by this envelope must not be delayed, except on account of bad order car. After it has been delayed once, great care must be taken to see that it is not delayed again en route.

Whenever it becomes necessary to set out this car on any account, Conductor or Yardmaster must attach hereto a "Set-Out Car" report.

Freight Auditing Department.

Superintendent Transportation.

FORM 10.



SUPERINTENDENT TRANSPORTATION, Springfield, Mo.:

AIRPORTATION, Springfield, Mo.:
From Station "A".....
Following Cars Traces Fast Merchandise Red Ball Freight received at this Transfer Station, worked into Schedule Cars and forwarded as indicated below:

2015 Section 4A

100

[illegible]

This Transfer Station 22 Report to cover cars worked and made at Transfer Stations previous 24 hours, and must be filed with Operator and transmitted Superintendent Transportation not later than two hours after scheduled departure of last local freight, or at such hour as may be instructed to cover special local conditions at such Transfer Station.

Each scheduled Merchandise Car must be reported from each Transfer Station must be reported on one of these blanks, with full information as called for, using as many lines as necessary to attract all information.

[illegible]

Form 11.

TIME AND PREFERENCE FREIGHT

merchandise center through the transfer stations at which the report is made to its destination or delivery to a connecting line. Distinctive envelopes are used to forward the transfer station reports by train mail. Finally, provision is made for daily, weekly, semimonthly, and monthly reports of merchandise red-ball freight. The system as a whole provides more detailed supervision over less than car load merchandise than has ever before been attempted.

III. ERIE RAILROAD MANIFEST FREIGHT

The time freight arrangements of the Erie Railroad¹ are sufficiently different from those previously outlined to warrant separate mention. One distinctive feature is the practice of grouping all cars containing freight of similar classification, moving from one point to another, and issuing a single "manifest" or waybill for the entire group instead of one for each car separately. The advantage claimed is that it simplifies the telegraphic reporting. The Erie, moreover, classifies its freight in four classes—quick dispatch, time dispatch, continuous movement freight, and ordinary freight. The difference lies in the fact that each is billed for movement on certain specified trains. The first two classes move as fast or "manifest" freight. Quick dispatch freight moves on the fastest freight trains, and consists of the highest class of freight; time dispatch is given a slower schedule, and consists of fourth-class car-load freight and certain specified articles of lower class.

Manifest freight can be billed from twenty-six authorized stations, and a definite procedure is followed in handling it. Red-card bills are used for both quick and time

¹ *Railroad Gazette*, vol. xxxix, Nov. 17, 1905, p. 467. Freight Train Book No. 3. Circular No. 7, "Instructions Governing the Handling of Freight."

dispatch to distinguish it from the green-card bills of continuous movement freight and the yellow manila card bills

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TIME AND PREFERENCE FREIGHT

Then a *telegraph manifest freight report* (Form 13) is made out, showing all manifests forwarded on a specified train and all cars left behind. It corresponds roughly to the usual consist report. Moreover, one of these reports is

IF NOT INTERESTED ON BACK OF THIS REPORT, "X"

SHERMAN X'S		ERIE RAILROAD. Conductor's Manifest Freight Report.							
Conductor/Vehicle	Date by	Date'd by	Name Date'		Cotton Date'	Date by	Date'd by	Name Date'	
				No. TONS PAID FOR					

From _____ to _____

Task No A	Display No B	Page Number C	Location of Station D	Time Arrived E	Date F
--------------	-----------------	------------------	--------------------------	-------------------	-----------

—Cars of MANIFEST FREIGHT taken from starting point of this train were left at end of run, except as follows:

[illegible]

The following Cars of MANIFEST FREIGHT were "picked up" en route, between starting point of this train and end of run:

[illegible]

Conclusions

FORM 14.

made after the departure of the train from each authorized station, and thus serves as a passing report. Finally, a *conductor's manifest freight report* (Form 14) is made

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out by the conductor when the train arrives at division points; if any cars are set out or added, it is noted in this form, which in that way serves as a set-out report.

IV. PREFERENCE FREIGHT

A number of railways have inaugurated a so-called "preference freight train service." The Pennsylvania Railroad, for example, makes provision for "preference freight" as distinguished from "ordinary" or "slow" freight. It includes¹ all perishable products, all less than car load merchandise, and all first, second, third, "Rule 26"², and fourth-class car-load merchandise.

As compared with the other methods described in this chapter, it is extremely simple. No special billing forms are used. To the train and yard men it is identified only by so-called "stickers," which, being mutilated at one end, are pasted to the regular conductor's card waybill. For through preference freight, a *sticker* with large red letters (Form 15) is used, while for local preference freight the sticker is printed with black letters (Form 16). The "sticker cars" go on the fast schedule trains provided for them. The system depends upon the speed of these trains, upon their right of way over all other freight trains, except live stock trains from Pittsburg and trains containing perishable goods from the South, and upon the stickers, which clearly indicate to all employees the nature of the freight contained in a car. In case a sticker car is set out for repair, a telegraphic report is made to the Superintendent of Freight Transportation. If any slow freight is

¹ Pennsylvania Railroad Transportation Department, "Preference Freight Train Service," General Notice No. 14 F., May 4, 1908.

² Official Classification No. 35. "Rule 26" includes articles rated at 20 per cent. less than third class.

PREFERENCE

Car No. _____

To _____

Via { _____

Loading _____

Combined Weight of Car and
 Loading for Engine Rating } _____ Not Tons

Re-ice at _____

A. D. 1910A

PENNSYLVANIA RAILROAD,

Pitt., Phila. & Wash. R.R., Northern Central Ry., W. J. & Southern R.R.,
 And Roads in Interline System.

From _____

Shipper _____

Consignee _____

Destination _____

Via _____

Prepaid \$ _____ To Collect \$ _____

Marked Capacity of Car _____ lbs.

ESTIMATED WEIGHT

ACTUAL WEIGHT

_____ lbs.

Gross _____ lbs.

WEIGHED AT _____

Tare _____ lbs.

_____ 190

Net _____ lbs.

Date _____ 190 _____ Agent

Transferred to _____ Car No. _____

At _____ Date _____ 190

1483. 3 1/2 x 5. C. I. 5-10-00

FORM 15.



C. T. 24A U. S. 1919
1918-1919

LOCAL PREFERENCE

For Train _____

Car No. _____

To _____

Via { _____

Loading _____

Combined Weight of Car and }
Loading for Engine Rating } _____ Net Tons

Re-ice at _____

A. D. 1919.

PENNSYLVANIA RAILROAD,

Pitt., Balto. & Wash. R.R., Northern Central Ry., W. I. & Annapolis R.R.,
And Roads in Interline System.

From _____

Shipper _____

Consignee _____

Destination _____

Via _____

Prepaid \$ _____ To Collect \$ _____

Marked Capacity of Car _____ lbs.

ESTIMATED WEIGHT

ACTUAL WEIGHT

_____ lbs. Gross _____ lbs.
WEIGHED AT _____

_____ Tare _____ lbs.

_____ 190 Net _____ lbs.

Date _____ 190 _____ Agent

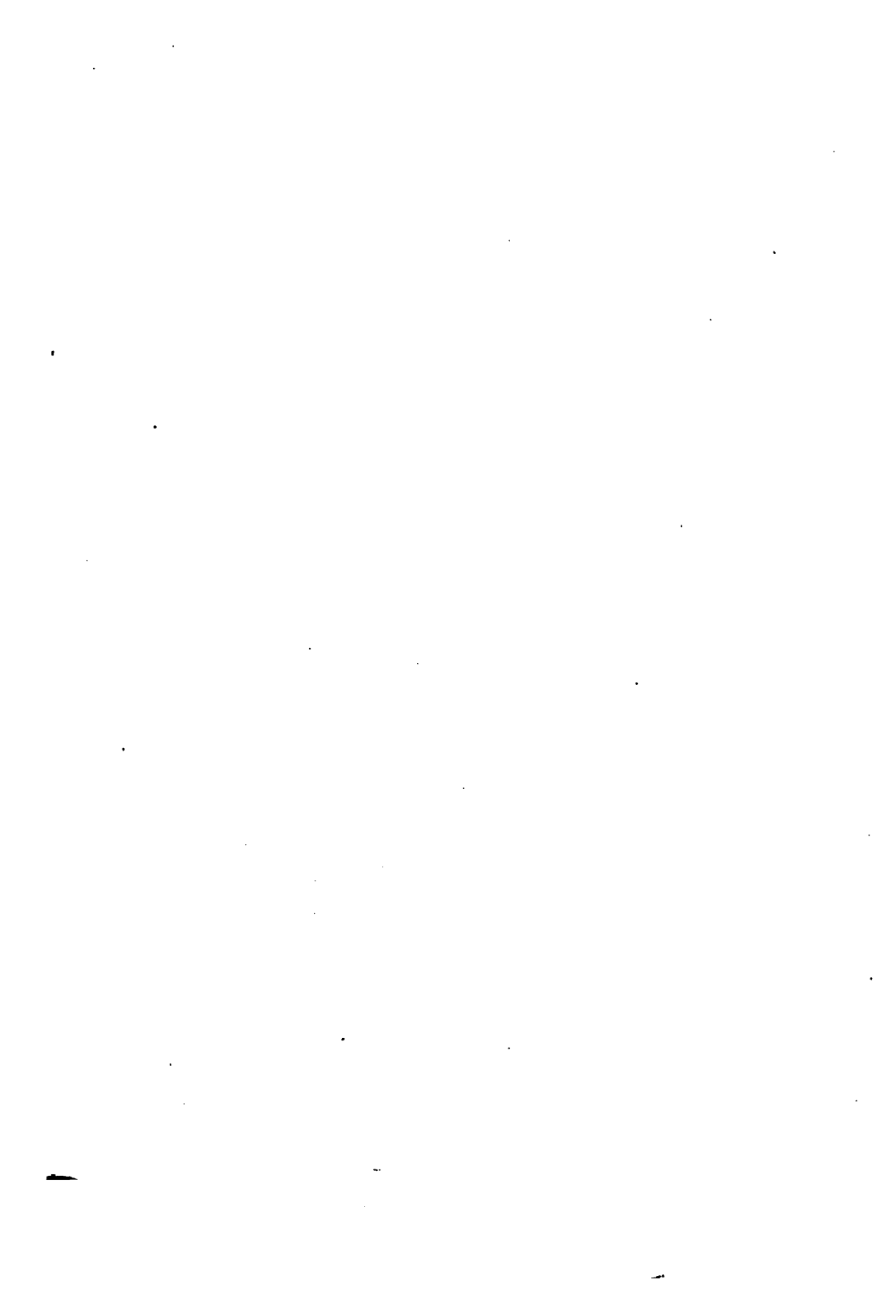
Transferred to _____ Car No. _____

At _____ Date _____ 190

1463. 3/4 x 8. C. L. 2-12-00

FORM 16.

283



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added to fill out a train's rating, the preference freight cars are bunched near the engine, and each division promptly reports the train's arrival to the next division, in order that advance arrangements may be made and unnecessary delays avoided. Otherwise no provision is made for an elaborate system of telegraphic reports.

V. METHODS OF CONTROL AT CENTRAL OFFICE

All the telegraphic reports made by the station agents, yard masters, or conductors handling time freight are transmitted to a central office. This may be the office of the Superintendent of Transportation, Superintendent of Car Service, or other proper official. Two general methods of control from the central office are in use—the train board and the loose-leaf record.

One type of train board may be illustrated by referring to that of the Great Northern.¹ It is sixteen feet long and is divided into sections, representing the various operating districts, and contains the names of all the leading terminals. Iron rods run across the board, carrying boxes, each representing a time freight train and containing the car numbers. Instead of having the usual plugs or pegs, the symbol numbers are placed on the ends of blocks, which carry slips of paper, upon which all the essential information received from the various reports is placed. The advantage claimed is that, in case of delayed cars, the required information is immediately available. As the train proceeds and reports are received from the designated stations the box is likewise moved. If any cars are delivered *en route* or are "set out," it is noted on the blocks representing them, and a complete record of the train's progress is kept. If tracing

¹ *Railroad Gazette*, vol. xxxix, Sept. 8, 1905, p. 222.

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becomes necessary, the blocks, unless false reports have been made, will indicate the car's location.

Another type of time freight train board is used by the Chicago & Northwestern.¹ As usual, there is a long board, with the train districts and terminals indicated on it. Instead of train boxes with blocks, however, a small board (7 x 7½ inches) is constructed for each train, and plugs, marked with the symbols and numbers of the various "time freight billing stations," are inserted in holes. The small board is then hung on the hooks of the large train board, to be moved along as reports are received. If cars are delivered, the pegs representing them are placed in cases provided for them; if cars are set out, their respective pegs are withdrawn from the board and, together with the set-out report, are plugged in the train board at the proper point, and remain there until the cars have been forwarded. Every car's position is somewhere shown by the position of its peg on the train board. The train board, with pegs, varies somewhat on different roads,² but is the most common method of locating time freight.

The loose-leaf record method may be illustrated by the practice of the Frisco System and the Erie Railroad. The St. Louis & San Francisco³ substituted the loose-record sheets in place of the train board, because the latter did not provide a permanent record for future use. The new method makes it possible to answer tracers days or weeks after the train has reached its destination. The Erie⁴ likewise keeps its records on large sheets, showing number of

¹ *Railroad Gazette*, vol. xxxix, Sept. 1, 1905, p. 208.

² For Illinois Central board see Dewsnup, "Railway Organization and Working," p. 94.

³ *Railroad Gazette*, vol. xxxix, Aug. 18, 1905, p. 158.

⁴ *Ibid.*, Nov. 17, 1905, p. 467.

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cars in each manifest, manifest number, destination, time ready for transit, train number, time of departure, and date of set-outs and pick-ups. The sheets are bound in book form and serve as a permanent record.

REFERENCES

1. R. H. Carleton, "The Red Ball System of Handling Fast Freight on the Rock Island." A paper in Dewsnap's "Railway Organization and Working," pp. 458-462, Chicago, 1906.

2. J. M. Daly, "Car Distribution and the Supervision of Fast Freight." A paper in Dewsnap's "Railway Organization and Working," pp. 80-98.

3. *Railroad Gazette*. The numerous articles referred to in the footnotes to the text of this chapter contain the best sources of information, other than the forms, bills, and blanks used by the railways. The papers used by any company can be obtained by applying to the proper official.

CHAPTER XV

FREIGHT TRAFFIC ASSOCIATIONS

Origin of railway traffic associations—Functions of early traffic associations—Development of traffic associations, 1870-1887—Southern Railway and Steamship Association—Trunk Line, and Central Traffic associations—Three services performed by Joint Executive Committee—Legal status of traffic associations—Existing freight traffic associations, types, names, and territory occupied—Organization of Central Freight association—Organization of Southwestern Tariff Committee—Activities thereof, statement by Mr. L. A. Leland—Rate agreements not permitted by law—References.

INTERRAILWAY relations are highly complex and tend to become more so. This results not alone nor mainly from competition, which, though persistent and pervasive, is being more effectively regulated with the steady integration of the railways. It is rather the essential unity of the transportation services of our railway system as a whole that makes necessary the coöperation and the association of the many separate companies engaged in performing those services. The traffic associations, freight and passenger, are the chief, although not the only, agencies through which the railroads coöperate; and the success these organizations have had in harmonizing the relations of the railways and in enabling them to work together in performing and extending their services has been of great advantage not only to the carriers themselves, but also to the general public. The traffic associations have assisted in making rates more

FREIGHT TRAFFIC ASSOCIATIONS

stable and less discriminatory and in making railway transportation more economical, prompt, and reliable; they have, in a word, given both carriers and the public the benefits of a unified service.

ORIGIN OF RAILWAY TRAFFIC ASSOCIATIONS

The necessity for the association of railroads and for the formation of traffic associations began to be evident when the several railway lines became long enough to compete with each other for freight and passenger traffic. This situation arose first during the decade from 1850 to 1860, when the trunk lines from the Atlantic seaboard reached the Great Lakes and the Ohio River, and thus became interested in securing the traffic between the Eastern States and the rapidly developing West. Commodore Vanderbilt united into a single line seven separate roads connecting Albany with Buffalo, and two years later he had a through line from New York City to Buffalo. The Erie Railroad was completed through to Erie in 1851; the Baltimore & Ohio reached Wheeling and the Ohio River in the same year; and in 1852 the Pennsylvania Railroad had a through rail line from Philadelphia to Pittsburg, although it was not until 1854 that trains could be run through from the Delaware to the Ohio.

The trunk lines, having thus been extended to the region beyond the Alleghanies, immediately began to compete with each other; and as early as 1854 efforts were made to keep their rivalries within reasonable limits. President J. Edgar Thomson, of the Pennsylvania Railroad, stated in his annual report in 1855 that "with a view to agreeing upon general principles which should govern railroad companies in competing for the same traffic and preventing ruinous competition, a free interchange of opinions took place during the

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past year between the officers of the four leading east and west lines, and also with those of their western connections." It soon became evident, however, that free interchange of opinions would not be sufficient to regulate interrailway competition; and thus we find President Thomson stating in his report of 1858 that an agreement had been signed by the presidents of the four trunk lines "for the purpose of agreeing upon remunerative rates, abolishing injudicious practices, and effecting a harmony of purpose conducive to the mutual advantage of the railway interest and the public." This agreement among the carriers provided that differences should be adjusted by mediation or arbitration.

While the origin of traffic associations is to be found in the interrailway agreements entered into during the decade preceding the Civil War, it was not until the 70's that traffic associations, as they are now known, were formally organized. During the 50's individual railroad lines reached 500 miles in length and inaugurated active competition in limited sections of the country. It was, however, not until railroad lines 1,000 miles in length had come to exist that railway companies began generally to associate in traffic associations. There was no railroad in existence 1,000 miles in length until about 1870. During the next twenty years a maximum length of 5,000 miles was reached; while since 1890 numerous companies have each come to control more than 10,000 miles of line.

The systematic development of traffic associations in the United States dates from the period when individual railroads 1,000 miles long came into existence. In 1869 the New York Central and the Pennsylvania Railroad each secured through connections to Chicago; five years later the Baltimore & Ohio and the Grand Trunk each had a through line from the seaboard to Chicago. Each of these four rail-

FREIGHT TRAFFIC ASSOCIATIONS

roads had lines exceeding 1,000 miles in length, while the Illinois Central Railroad and other roads in the Mississippi Valley were nearly as long. The competition of the New York Central and the Pennsylvania Railroad for the traffic from Chicago became uncontrollable, and the situation was made even worse when the Baltimore & Ohio and the Grand Trunk reached that great tonnage center. One rate war followed another in succession, until organized traffic associations brought some degree of harmony into the relations of the warring railways.

PURPOSE OR FUNCTIONS OF THE EARLY TRAFFIC ASSOCIATIONS

In general, traffic associations were formed to regulate competition by means of rate agreements and pooling contracts. They were also intended to assist railroads in dealing with all traffic matters of common interest. The traffic regulated by associated action included both joint and competitive business. The rate agreements provided for the division or prorating of through rates among the participating roads and for fixing the charges upon competitive traffic free to move by more than one railway line. Neither rate agreements nor pools had anything to do with noncompetitive traffic, which, even in the days of pooling, must have constituted the larger and more profitable part of each railway's business.

Pooling formed such an important part of the functions of the early traffic associations that it is desirable to understand exactly what railway pooling was and how it was accomplished. *Pools were agreements among railroads whereby their competitive traffic or receipts from that traffic were divided among the companies according to stipulated ratios.* There were two kinds of pools: those which

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provided for the division of the competitive tonnage were called traffic pools, and those which arranged for the distribution of the receipts from that traffic were money pools. Traffic pools were applicable only to the freight business, while money pools might cover both freight and passenger receipts.

The organization of a traffic pool was simple. The railroads agreed upon the rates they were to charge upon competitive traffic, and also upon the percentage of the total tonnage to which each line should be entitled. The percentages were determined by the shares of the total business obtained by the several rival lines before they entered into the pooling contract. If, in the operation of the pool, it was found that some lines were not receiving their stipulated share of the total tonnage, the traffic association took measures to divert to that line traffic from roads receiving more than their allotted percentage. It was thus necessary for the carriers, instead of the shippers, to route a certain amount of traffic. This was found to be one objection to the tonnage pool. The carriers, moreover, objected to having traffic which they had secured taken away and given to rival lines. The money pool was simpler, and was usually preferred.

When railroads pooled the earnings from their competitive business each road retained from one third to one half of the receipts from all competitive traffic and turned over the remaining two thirds, or one half, of the receipts into the treasury or pool of the traffic association, to be distributed periodically among the members of the organization in accordance with agreed percentages. In general, each road was allowed to retain enough of the earnings from its competitive traffic to cover the cost of conducting transportation. Such, in brief, were the main

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features of the pooling arrangements. The machinery by which these contracts were enforced will be described in speaking of the organization of traffic associations.

EARLY DEVELOPMENT OF TRAFFIC ASSOCIATIONS

1870-1887

Railways in the central West radiated from Chicago, St. Louis, and the other more important cities of the upper Mississippi Valley, and, in course of time, came to connect these cities with each other by a fairly complete network. The largest cities were joined by two or more roads, which, shortly after the war, began actively to compete with each other, though their rivalry was less intense than was that of the trunk lines north of the Ohio and Potomac. With the spread of population to and beyond the Missouri River, Omaha became a large traffic center; and, before 1870, was connected with Chicago by three equally strong roads—the Northwestern, the Rock Island, and the Burlington. Each company naturally desired all the traffic, but realized that the business must be divided among the competitors. Accordingly, the three companies formed an association, agreed to charge the same rates on their competitive traffic, and to divide the business equally.

These railroads established a money pool; each company was to retain forty-five per cent of its receipts from the through passenger business and fifty per cent of its earnings from the competitive freight traffic. The remainder of the revenues from this pooled business was to be paid into the common treasury, to be divided equally among the three competitors. This agreement, modified in detail from time to time, was maintained, with the exception of a short time in 1882, for fourteen years, when the organization gave way to the larger one called the Western Freight Association.

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Six years after the formation of the Chicago-Omaha Association the Southwestern Railway Rate Association was established, including the roads connecting Chicago and St. Louis with Missouri River points. This also had a money pool. The principal object of the association was to protect the grain-trade interests of Chicago and St. Louis. One of the useful services of the association was that of acting as a clearing house for the settlement of the interline accounts of its members.

The next step in the development of traffic associations was taken in the South. In this section of the United States the cotton traffic held as prominent a place as did the grain shipments in the upper Mississippi Valley. The great center of the cotton trade before the Civil War and for some time thereafter was Atlanta, Ga.; and the traffic of the railroads consisted largely of handling the raw cotton from Atlanta and the other important markets out-bound, radially, to the south Atlantic and Gulf ports. Naturally, each of these interior cotton markets and the roads serving them sought to control as much trade as possible; and then, too, each seaport reached was ambitious to handle a maximum tonnage of out-bound cotton and of the in-bound supplies and manufactures required on the Southern plantations.

In December, 1873, the four roads connecting Atlanta, Ga., with the seaboard formed an association, through which they fixed their rates upon cotton and pooled their traffic. The success of this organization led, two years later, to the formation of the large and powerful Southern Railway and Steamship Association, whose membership came in time to include the traffic of all the railway and steamship lines south of the Ohio and Potomac and east of the Mississippi. This organization was the creation of the genius of Albert Fink, one of the greatest transportation men this country

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has ever had. Inasmuch as this plan of organization was largely followed by subsequent associations, a brief description of the organization will be instructive.

The association included some thirty railroad and steamship companies, each represented by an official of high rank. These representatives constituted the "convention" which was the legislative body of the association. The convention selected a general commissioner, who was the executive official of the organization, a board of arbitrators, and an executive committee, which, together with the commissioner, had jurisdiction over the affairs of the association between the sessions of the convention. In 1883 the executive committee was given greater importance. It consisted of an executive officer from each of the principal roads. It had jurisdiction over joint traffic, and, through its rate committee, decided what each company should charge upon its competitive traffic. The rate committee came in time to be of great importance. Its membership included the general freight agents of the principal lines. Action had to be unanimous, and, in case of disagreement, there was an appeal to the executive committee, whose action also had to be unanimous. In case the executive committee disagreed, questions were referred to the permanent board of arbitrators provided for in the articles of organization.

The rivalries of the members were keen, and the association was held together and made effective mainly because large authority was placed in the hands of the commissioner, who could go so far as to declare a rate war against any member of the association that violated its agreement. The different members of the organization sought so eagerly to build up their traffic that it was found necessary at one time, in order to prevent deviation from agreed rates, to require each member to pay into the pool, for subsequent

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distribution, eighty per cent of the receipts from the competitive traffic. There was also a clearing house for settling the joint traffic accounts of its members. The association was successfully maintained until the great panic of 1893, which brought such chaos into interrailway relations as to disrupt the organization.

In the northeastern part of the United States, between the Atlantic seaboard and the middle West, railroad traffic has always been heavier than in any other part of the country, and the struggles of rival lines have been more severe there than elsewhere. The first agreement for the regulation of competition was entered into in 1872 by the anthracite coal carriers. The several railway companies interested in the mining and transporting of anthracite entered into a contract in that year to restrict the amount of coal mined and to divide up the traffic according to stipulated ratios. This agreement continued for four years. Another and similar one was entered into in 1878, and renewed from time to time thereafter. This agreement of the coal carriers covered only a single item of traffic and applied to only a limited territory.

The great battle of the trunk lines was over the business to and from the central West. The first effort to divide up this business was made in 1875, when the shippers of live stock from Chicago to the East were requested to divide up their shipments among the several interested lines in accordance with agreed ratios. The shippers of live stock were known as "eveners." The Standard Oil Company acted as an evener in the oil trade. These contracts were most objectionable from the point of view of the railroads and the general public. The large shippers who were made eveners secured very much lower rates than the other shippers, to the detriment of the railroads and of the competitors of the

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eveners. Fortunately, this contract was terminated in 1879, when the trunk lines were able to enter into a pooling contract to divide up their competitive east-bound business. This action of the carriers was made possible by the formation, two years earlier, of the Trunk Line Association.

At the close of a long and disastrous rate war, which ended in the summer of 1876, the trunk lines realized that it was necessary for them to associate; and they succeeded in obtaining the services of Mr. Albert Fink, who was able to create an association of the trunk lines that proved nearly as successful as did the organization of the Southern Railway and Steamship Association. When the Trunk Line Association was formed, in 1877, the members entered into an agreement as to the rates on west-bound traffic and as to the pooling of that business. The New York Central and the Erie each received thirty-three per cent, the Pennsylvania Railroad twenty-five per cent, and the Baltimore & Ohio nine per cent.

A few months after the formation of the Trunk Line Association, and before the end of 1877, the numerous railroads between Chicago and St. Louis on the west and Wheeling, Pittsburg, Erie, and Buffalo on the east, united in the Central Traffic Association. Then, in 1879, the Central Traffic Association and the Trunk Line Association established the Joint Executive Committee, the chairman of which was Albert Fink, the Commissioner of the Trunk Line Association. This Joint Executive Committee undertook successfully the performance of three tasks, two of which were extremely difficult and could hardly have been accomplished had the chairman been any other man than Albert Fink.

The first and most complicated of these tasks was the fixing of the railroad rates to be enjoyed by Boston, New

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York, Philadelphia, and Baltimore on east-bound and west-bound traffic with the central West, both domestic and export and import. Each of these ports was fighting the others desperately, the railway rates being most disorganized at New York, which was served by the greatest number of lines to the West. Boston, being farther from the West than New York, admitted the justice of being charged a differential above New York on domestic traffic, but insisted upon having as low rates on exports and imports as were given to New York; Philadelphia, which was about ninety miles nearer Chicago, demanded lower rates on all traffic than were accorded New York; while Baltimore, which was still nearer the West, demanded that its rates should be under those given to Philadelphia. Distance alone did not seem to the trunk lines an adequate reason for granting differentials to the "outports" of Philadelphia and Baltimore; but the question was greatly clarified by the report made by Albert Fink in 1882 upon the "Adjustment of Railroad Transportation Rates to the Seaboard," in which it was shown that the rates from the central West to the north Atlantic ports were, for the most competitive and controlling portion of the traffic at that time, parts of through rates from the central West to Liverpool and Europe, and that the rail charges to and from Philadelphia and Baltimore were as much less than those to and from New York as the ocean rates from Philadelphia and Baltimore to Europe were in excess of the ocean charges between New York and Europe. The controversy was referred by the trunk lines to an arbitration committee, which decided that Boston should receive the same rates as New York on export and import traffic, that Philadelphia should have a differential under New York, and that Baltimore should be given lower rates than Philadelphia received. This adjust-

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ment was not satisfactory to the New York Central Railroad and the New York interests, but they decided, after a fruitless struggle, to accept the principle of the differentials; and this principle has been maintained to the present time, although the difference in the rates to the various ports has grown less as the result of subsequent readjustments. At the present time the ocean rates are practically the same to and from all the Atlantic ports, and it is questionable whether the inland differentials on exports and imports will be maintained in the future.

The second task performed by the Joint Executive Committee of the Trunk Line and Central Traffic associations was the apportionment of the competitive east-bound traffic among the members of the organization. This apportionment was made year by year, the details of each apportionment being fought over earnestly, as would naturally be the case.

The third work performed by the Joint Executive Committee was the prorating of through rates between the East and the West—between the lines connecting at Wheeling, Pittsburg, Erie, and Buffalo. The supervision of joint traffic and the division of through rates was an important duty, but it did not present so many difficulties as did the fixing of differentials and the pooling of east-bound traffic.

The traffic associations, freight and passenger, established during the 70's in the western, southern, and eastern sections of the United States increased in number until practically every railroad company was a member of more than one organization. The associations became increasingly successful in steadying rates and distributing competitive traffic so as to check interline warfare, although they were unable, under the conditions of competition then existing, to maintain continuously harmonious relations among the

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aggressive rival railroads. It was found possible by rate agreements and pools partially to regulate, but by no means to terminate, competition; rates and fares declined, and the public shared with the railways the benefits due to the more economical and better services made possible by the frequent introduction of technical improvements.

LEGAL STATUS OF TRAFFIC ASSOCIATIONS

Pooling contracts, as has been noted, were a prominent feature of the organization of all traffic associations established before 1887, when the Interstate Commerce Act, in section 5, declared "that it shall be unlawful for any common carrier subject to this act to enter into any contract, agreement, or combination with any other common carrier or carriers for the pooling of freights of different competing railroads, or to divide between them the aggregate or net proceeds of the earnings of such railroads or any portion thereof; and in any case of an agreement for the pooling of freights, as aforesaid, each day of its continuance shall be deemed a separate offense."

Pooling agreements were not enforceable at law even before they were declared illegal. It was not an offense to enter into a contract to pool traffic; but such agreements were not enforceable, because they were in restraint of trade, and thus in violation of the general principles of the common law. As Judge Cooley has stated: "A contract may be illegal in the sense that it is forbidden by a law which imposes some penalty for entering into it; or it may be illegal because, though not forbidden, it is considered to be of an injurious and demoralizing tendency, and therefore the law will not favor it, but will refuse to lend its aid in its enforcement. If a contract is only illegal in this last sense, parties are at perfect liberty to enter into it if they

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please, but performance of its conditions must be entirely voluntary."

Stated in popular phraseology, pooling contracts were "gentlemen's agreements," the strength of which depended upon the honor of the members entering into the contract and upon the ability of the traffic associations to impose fines for the violation of these contracts. Railway officials and others in favor of pooling advocated the legalization of agreements to divide traffic or earnings therefrom; but the public, being generally opposed to such agreements, refused to legalize the contracts and made them unlawful.

The prohibition of pooling compelled the traffic associations to reorganize. This was promptly and successfully done; pooling arrangements were eliminated, but agreements as to the making and maintenance of rates were made as stringent as possible. During the prosperous years of the early 90's the railroad situation was tolerable, if not satisfactory; but when the great panic of 1893 came on, the struggle of the railroads for competitive traffic was so intense as to make the observance of rate agreements and the maintenance of harmonious relations practically impossible.

By 1897 the panic was nearing an end; the railroads were strengthening their traffic associations and were doing all that could be done to make their rate agreements as regards competitive traffic effectively binding. At this juncture the United States Supreme Court, in deciding the *Trans-Missouri Freight Association* case, held that rate agreements were in violation of the Antitrust Act of July 2, 1890. By the first section of this law every "contract, combination in the form of a trust, or otherwise, or conspiracy in restraint of trade or commerce among the several States or with foreign nations, is hereby declared to be ille-

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gal." This law was passed to prevent the monopolization of business by industrial corporations, but the Supreme Court, in 1897, decided that the law, being general in terms, applied to railroads as well as to other corporations. This decision of the court was reaffirmed the following year, when the Joint Traffic Association, whose members included the trunk lines and their western connections, was also declared to be in violation of the act of 1890. Another reorganization of the traffic associations to eliminate rate agreements now became necessary.

EXISTING FREIGHT TRAFFIC ASSOCIATIONS

The success which the railroads had in reconstructing their traffic associations in 1897 and 1898 was greater than even the most sanguine had reasons to expect; and the progress of these associations in strength and efficiency during the past decade has been little less than surprising.

This has been due to two causes, the chief of which was the unparalleled prosperity in all lines of business from 1899 to 1907. The traffic of the railroads increased so rapidly that the great anxiety of their managers was not to secure more traffic but to handle that which was offered to them. Under these conditions, the maintenance of rates and the regulation of interline competition was a comparatively easy task. The second reason accounting for the success of traffic associations was the rapid integration of railways. The prosperity of the country made capital abundant and enabled syndicates of financiers to bring about the coördination and consolidation of railways with unprecedented rapidity. Community of interest in the management of railroads became the guiding principle, and it was relatively easy for the railroads to regulate their interline traffic affairs by associated action.

FREIGHT TRAFFIC ASSOCIATIONS

At the present time there are four classes of railroad traffic associations, each performing distinct services. The first class includes the large organizations of which all railroads in a wide section of country are members. The second class comprises associations limited to a small territory, usually a single state. The third class consists of local bureaus interested in the traffic of a single city, and its immediately surrounding territory; while the fourth type of organization has to do only with one or more specific kinds of traffic.

At the present time there are twelve freight and six passenger associations of the first class, the freight associations and the territory occupied by each being as follows: (1) The railroads of New England are members of the New England Freight Association, a body with but limited functions. (2) The Trunk Line Association has supervision over the through west-bound traffic from points east of Buffalo, Erie, Pittsburg, and Wheeling to places west of those cities, and all "trunk lines" are members of this old and influential organization. (3) The Middle States Freight Association is within the Middle or North Atlantic States and has to do with local traffic and with that east-bound out of its territory. (4) Between Buffalo, Erie, Pittsburg, and Wheeling on the east, and Chicago and St. Louis on the west, lies the territory of the efficient Central Freight Association which concerns itself with the local traffic of the roads within its territory and with shipments east-bound to points beyond its territory. In the southern part of the United States east of the Mississippi and south of the Ohio and Potomac are the (5) Associated Railways of Virginia and the Carolinas, and the (6) Southeastern Freight Association, whose territory is bounded on the west by a line drawn through Cincinnati, Middleboro, Chat-

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tanooga, Birmingham, Montgomery, and Pensacola; while west of this line and extending to the Mississippi River is the region occupied by the (7) Southeastern Mississippi Valley Association. Between Chicago and Lake Michigan on the east and the Missouri River on the west is the field of the (8) Western Trunk Line Committee; while west of the Missouri and between the Missouri and the Rocky Mountains is the territory of the (9) Trans-Missouri Freight Bureau. Southwest of the Missouri and west of the lower Mississippi is the section covered by the (10) Southwestern Tariff Committee; while overlapping the territory occupied by the three trans-Mississippi associations and concerning itself with the traffic between the Mississippi Valley and the Pacific seaboard, is the (11) Transcontinental Freight Bureau. The other large association of which American railroads in the northern part of the United States from Maine to Washington are members is (12) the Canadian Freight Association.

Traffic associations of the second class include bureaus and committees whose activities are restricted to a state or a small section of territory. These organizations include the Colorado Freight Bureau, the Colorado-Utah Freight Bureau, the Local Utah Freight Bureau, the Illinois Freight Committee, the Michigan Freight Committee, the Northern Committee (Freight), the Virginia Freight Traffic Association, the Mississippi Valley Freight Association, and the Western Pennsylvania & Eastern Ohio Railway Traffic Association.

The work performed by these associations of the second class is restricted in scope as well as in territory as compared with the large organizations. They concern themselves with the local traffic and the interline relations of the railroads within their respective sections of country which

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include but a minor part of the United States as a whole. It is the practice of these bureaus and committees, as also of the large associations, to publish, under the rules of the Interstate Commerce Commission, tariffs upon the traffic of the various members of the organization. The publication of these tariffs by the association, instead of by individual members, is done "in the interest of economy, one tariff being published for the use of all lines between given points."

The local associations, those of the third class, are more numerous than those of the first and second classes, many large cities and important traffic centers each having a freight committee or bureau. These local committees include, among others, the Buffalo Freight Committee and the Chicago Freight Committee. There are also the Cincinnati, Cleveland-Lorain, Columbus, Dayton, Detroit, Indianapolis, Louisville, Milwaukee, Minneapolis, New Orleans, Peoria and Peking, Pittsburg, St. Louis, Sandusky, Springfield (O.), Toledo, Wheeling, and Zanesville freight committees. At some of these points, as well as at other centers, there are smaller local passenger bureaus or committees. As their names imply, these organizations endeavor to improve the services and to harmonize the interline relations of railroads at large traffic centers.

The fourth class of railway freight organizations includes those bureaus interested in special kinds of traffic. The functions of these organizations, as their names indicate, are various. There is the Gulf Foreign Freight Committee, especially interested in the export and import traffic handled through the Gulf ports from Galveston to Pensacola. The transportation of coal has brought about the establishment of the St. Louis Coal Traffic Bureau and the

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Ohio Coal Traffic Association. At Birmingham, Alabama, is the Southern Iron Committee. There are thus only four of these associations concerned with special traffic.

THE PRESENT ORGANIZATION OF FREIGHT TRAFFIC ASSOCIATIONS

The work of the freight traffic associations is of such great importance, and the printed information regarding them is so meager, that a somewhat full statement of their organization and activities is desirable. This can best be made by describing two typical bodies, such as the Central Freight Association and the Southwestern Tariff Committee. Any one of several other associations might be selected for analysis; indeed, each of the large organizations combines most of the salient features of all.

The Central Freight Association is one of the oldest and most fully developed of the freight traffic organizations, it and the Central Passenger Association being the outgrowth of the Central Traffic Association, established in 1877. The membership of the Central Freight Association includes the railroad companies serving the territory north of the Ohio River and east of the Mississippi, with the exception of Wisconsin and the northern peninsula of Michigan. The eastern boundary is the line through Buffalo, Erie, Pittsburgh, Wheeling, and Parkersburg. The general offices are in Chicago.

The purposes of the association according to the articles of organization in effect at the beginning of 1910, are declared to be "To enable the members to confer, advise, and coöperate with each other and with other roads upon the subjects of divisions of through rates, statistics, classifications, rules, regulations and inspection, and to secure to the members the interchange and promulgation of au-

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thentic information in regard to the traffic and tariffs and rates of the respective parties."

To give effect to these purposes the members agree to submit to the association "all questions of common interest upon which action is desired," "to arbitrate all differences upon questions coming within the scope of the agreement," and "to send to the chairman two copies of all local and joint state and interstate tariffs of rates and of changes therein, also classification and rules at the time of making, issuing, or filing the same with the Interstate Commerce Commission; also of all agreements with other common carriers in relation to the rates and divisions of traffic coming in whole or in part under this agreement."

By this agreement the several railways obligate themselves to keep each other fully informed as to their rates and traffic arrangements; but inasmuch as the making of rates by joint action is a violation of the Antitrust Act of 1890, the articles of organization are careful to stipulate that "nothing herein contained shall be so construed as to confer on the majority or any number of members of the association the power to make rates for any member."

At the meetings of the association the companies are represented by a designated official, usually a general freight agent. The regular meetings occur upon alternate months; but special meetings may be called by the chairman or upon five days' notice at the request of five members. A majority constitutes a quorum, and a two-thirds vote of those present is necessary to decide most questions. The organization includes a chairman, an executive committee, and other standing committees and bureaus.

The chief executive officer is the chairman. He interprets and enforces the articles of agreement; appoints the requisite clerical force; and compiles and issues the statistics

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and joint publications, including tariffs. In the compilation of tariffs he is the agent of the individual members acting severally. "All communications regarding divisions of through rates, and their issuance, between lines in other associations and those in the territory of those in this association shall be through the chairman." The most important service or duty of the chairman is to inform all members of any propositions made by an individual member concerning changes in rates or traffic arrangements; this he does by letter; and thus every member of the association has an opportunity to object to the proposed action of any individual member.

The association has two important standing committees on rate matters, the Chicago and Ohio River Committee, and the St. Louis-Cincinnati-Louisville Freight Committee. The office of the former is in Chicago and of the latter in St. Louis.

There is a Weighing and Inspection Bureau with sub-bureaus whose "officers and inspectors shall, when necessary, examine and verify or correct, when and where found, all errors in rates, classifications and weights on all classes of through or local tonnage which is carried on or over the railway companies members of the association," and the chairman, officers, or inspectors may examine such books and papers of the individual railways as may be necessary to make the inspection. The inspection bureau thus performs the important service of protecting honest shippers and carriers against the evil consequences of fraudulent classification, weighing and billing.

The Central Freight Association and the Western Trunk Line Committee maintain a Joint Rate Inspection Bureau whose functions are indicated by its title. The accounts of this bureau are periodically examined by the Standing

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Auditing Committee of the Joint Rate Inspection Bureau. This auditing committee consists of two members: One an accounting officer of one of the railroads members of the Central Freight Association, and the other an accounting officer of a railroad belonging to the Western Trunk Line Committee. The executive committee of each organization annually selects the accounting officers that are to serve on this Standing Auditing Committee.

The expenses of the association are shared jointly by the members, "as may be agreed upon." If necessary, monthly assessments may be made upon the members. The chairman's accounts are audited trimonthly by a standing auditing committee selected annually by the executive committee.

The above brief statement of the purposes, the organization, and the committees and bureaus of the Central Freight Association is sufficient to indicate the great service it renders both carriers and shippers. Without such associations, the development of a rate system adapted to the needs of a large section of country served by numerous railways would be impossible. The coöperation of the carriers through their traffic association enables them to substitute harmony and system for conflict and chaos in rate-making; it, also, facilitates the establishment of through rates over connecting lines and the satisfactory prorating of the through rate among the interested carriers; it provides the machinery for the detection and prevention of fraudulent practices, and makes it possible for the rates made by the several carriers to be published in one "tariff" to the advantage both of shippers and of government officials charged with the duty of regulating the railways in the interests of the public.

The function of traffic associations, as regards rate-making and the publication of tariffs, is well stated in the

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preamble to the articles of the association of the Southwestern Tariff Committee which reads as follows:

“ Believing that the publication of rates in joint or common tariffs is desirable for both the shipper and the carrier, in that it accomplishes uniformity and avoids the conflict and confusion of individual issues; also that it will result in a more intelligent compliance with the spirit of the Act to Regulate Commerce, and the orders and rules of the Interstate Commerce Commission regarding the publication of tariffs, and also in economy in such publication: the lines parties hereto have formed an organization to be known as the Southwestern Tariff Committee.”¹

The following exceptionally clear and concise summary of the work of the Southwestern Tariff Committee has been made by its chairman, Mr. F. A. Leland. The statement

¹ The organization of the Southwestern Tariff Committee, as set forth in its Articles of Association, is a model of brevity. The Articles are as follows:

Southwestern Tariff Committee

Such Committee shall be conducted by a Chairman, who shall be subject to the direction of an Executive Committee.

The Executive Committee may prescribe such rules as are necessary to the proper conduct of the Committee, and shall have supervision of all expenditures.

The work of the Committee shall be confined to the publication and the distribution of the Tariffs issued for account of the members, and the necessary details in connection therewith.

The Chairman shall be the Agent of each individual line, and the Tariffs issued by him as such Agent shall be upon the authority of Powers of Attorney given to him as required by the rules of the Interstate Commerce Commission.

The lines parties hereto agree to pay their proportion of all expenses incurred by the Committee during their membership, on a basis to be fixed by the Executive Committee.

The traffic to which these Articles relate shall be (with designated exceptions) all Interstate Freight Traffic and Freight Traffic with foreign countries having origin or destination in the States of

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regarding this organization is, for the most part, true of other associations, and has special value because it is an official account of the manner in which the traffic associations enable their members, acting severally, to coöperate in the making and publication of rates. Mr. Leland says:

“ An organization of this nature, under different names, has been in existence among the Southwestern lines, dealing with rates to and from the State of Texas, for about twenty years. Its principal function at the present time is to compile and print for account of members and the other participating lines what are known as common tariffs, embodying rates for account of all such lines in the common territory. This results in tariffs which are more uniform in application and more intelligently represent the views of the Interstate Commerce Commission as expressed in their Tariff Circular No. 17-A, while reducing to a very great extent the expense which carriers would be put to were such rates published by each separately.

“ Our Special Circular No. 3-A gives an outline of the tariffs which we publish. The tariffs contain from 20 to 500 pages each, and apply between practically all of the territory in the United States and the States of Oklahoma, Arkansas, Louisiana, Texas, and the Republic of Mexico. This method of tariff publication has been greatly encour-

OKLAHOMA, TEXAS, ARKANSAS, including TEXARKANA, and LOUISIANA.

In conjunction with the lines members of the Railway Association of Mexico, and the initial New Orleans railroads, these Articles also include Freight Traffic from points in the United States west of Seaboard Territory, and east of and including Utah common points, to Common Points in the Republic of Mexico, via all-rail and rail and Gulf routes.

It is the purpose of the lines parties hereto to extend the publication of joint or common tariffs to other territory, should it be found practicable.

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aged by the Interstate Commerce Commission for the purposes mentioned above, and it represents the greatest development along these lines of any similar organization in the United States. In other words, while our membership and territory may not be as extensive, the number of publications issued by this office is far greater than by any other of the tariff agencies.

“ The other important function of the committee is that of affording to the railroad companies facilities for the expeditious handling of the suggestions for rate changes which are constantly being received by the carriers from the interested shipping public. The carriers believe that only by a free interchange of views among themselves and the interested shippers can these suggestions as to rate changes be made in a manner at all satisfactory to either the carriers or to the shipping communities. In other words, the shipper applies to one or more railroad companies for a better adjustment of freight rates on his traffic for the purpose of enabling him to increase his trade at certain markets, which he fears he will be deprived of by some other shipper at some other shipping point which, in his opinion, has a better relative freight adjustment. There are very few cases where the shipper contends that the rate, *per se*, is unreasonable. Manifestly, requests of this kind could not be accepted by the interested carrier without some discussion with the other lines serving the shippers from the other points of origin and other shippers interested in the same commodities. This could be done by correspondence or by conferences direct with such parties, but the number of such requests is so great that it is systematized by the use of this organization and the holding of meetings at stated periods at which these subjects are discussed between the railway representatives, and at which the shippers are given an opportunity to be

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heard. We then keep a record of conclusions that were reached and proceed, to a very large extent, with the publication of such changes, for account of all the lines, as may have been decided upon as a result of the discussion.

“ There is no attempt in this organization to restrict the freedom of the members in placing in effect from time to time any rates which they decide it is to their interest to make, and every carrier, member of the organization, has the undisputed right to instruct the chairman, as its agent, to publish any rates which it cares to adopt. The members obligate themselves, however, before making such change to outline the reasons for the change desired and discuss its effect on other markets, other commodities, and shippers with the other lines that may be affected by such change.

“ Another important function of the organization is the distribution from this central office to interested shippers of the tariffs issued by the committee. This is accomplished by members furnishing us the names of the shippers they desire to supply with one or more of our issues, and the prompt mailing thereafter to such shippers of the tariffs, supplements, or reissues as they are published. This eliminates the delay which would be incident to the furnishing of such tariffs to the interested carriers and the redistribution from their offices to the shippers, and also avoids duplication, as we do not send tariffs if the shipper is already on our mailing list for the issue.

“ We occupy about 12,000 square feet of floor space in the Century Building, St. Louis, and employ an average of about seventy persons.”

As long as the public is served by a large number of separately operated railways, freight traffic associations will

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continue to be useful organizations. They are the agency by which is secured the unity and harmony of action among carriers that is necessary alike to the railway companies and the public. Ever since the decisions of the United States Supreme Court in the Trans-Missouri Freight Association and the Joint Traffic Association cases, in 1897 and 1898, declaring associated action in the making and maintenance of rates to be a violation of the Antitrust Act of 1890, legislation legalizing rate agreements and making them subject to the regulation of the Interstate Commerce Commission has been desirable. An effort was made to include in the Railway Rate Act of June 18, 1910, a clause that would have permitted the railways to enter into rate agreements, valid upon approval of the Interstate Commerce Commission; but the law, as enacted, is without this provision, and the legal status of joint action in rate-making remains unchanged.

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3. William Z. Ripley (Editor), "Trusts, Pools, and Combinations," 1905. (A collection of papers and court decisions.) The paper by Henry Hudson on "The Southern Railway and Steamship Association," first published in 1891, is of especial value.
4. Report of the United States Industrial Commission, vol. xix, pp. 304-348.
5. *The Official Guide of the Railways and Steam Navigation Lines of the United States*, published monthly. (This contains a list of all traffic associations of which the railways in the United States are members.)

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6. The best sources of information regarding the functions of traffic associations are the "Constitution and By-laws" or the "Articles of Organization" of the several bodies. Most, but not all, of the associations have printed copies of their articles of organization.

CHAPTER XVI

THE DEVELOPMENT OF FREIGHT TRAFFIC

Connection between rates and traffic development—Between service and traffic growth—Freight solicitation by traffic department—Industrial, land, and immigration departments—Agricultural education—Miscellaneous methods of developing freight—References.

No part of railway management demands more attention on the part of the carriers than the solicitation and maintenance of freight traffic; the revenue from the billion tons of freight annually carried constitutes the main source of railway profits. Freight solicitation is the work of many officials and agents, and is carried on in many different ways; but its leading aspects will be revealed by considering (1) rate-making and traffic development, (2) the freight service and traffic development, (3) solicitation through the freight department, (4) the industrial, land, and immigration departments, (5) agricultural education, and (6) miscellaneous ways and means.

I. RATE-MAKING AND TRAFFIC DEVELOPMENT

The manipulation of the rates in freight solicitation is no longer permissible. Prior to the enactment of the Interstate Commerce Act, in 1887, special rates, and sometimes rebates, were general. These devices were used to divert freight from one line to another, to build up new industries,

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and to help one shipper in preference to another in return for promised traffic. Even after the Interstate Commerce Act became a law, these practices continued, and the anti-rebating and discrimination clauses tended to change the form of the rebates and special rates from the obvious to the concealed. After the passage of the Elkins Act, in 1903, freight solicitation changed in character. That law, together with the Hepburn Act of 1906, and the Rate Law of June 18, 1910, have eliminated the rebate and special rate from freight solicitation and rate-making.

There always will be a close connection between rates and traffic development. A railroad operating in a new territory may, for a time, offer to carry freight at rates which barely cover expenses, in order that it may rapidly develop the region. A producer, located a long distance from available markets, may be given rates which enable him to sell his products at a profit in competition with more favorably located producers. There are instances of railways carrying material for road-making free of charge in order that the ultimate traffic to and from a community might be increased. Some industries are given relatively low rates to enable them to develop in order that railway traffic may grow. Coal, hay, grain, and similar bulky commodities are sometimes carried at less than the total expenses incurred by the railroads. Rates are made with special reference to business considerations, so that present traffic may move and that future traffic may be encouraged.

II. THE FREIGHT SERVICE AND TRAFFIC DEVELOPMENT

Railroads now compete relatively little in the rates which they charge, but they compete more than ever in the service which they offer. Increasing stress is laid upon the rapidity with which freight is shipped. "Time" and "prefer-

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ence " freight arrangements, as is explained in Chapter XIV, Vol. I, are being adopted, so as to send certain classes of freight through to destination with unusual rapidity and certainty. Fast freight trains running on schedule time are being operated. Equipment is specialized, so that special cars for fruit, meat, live stock, coal, ore, oil, and other commodities are available. Refrigerator cars, warehouses, and icing stations are installed by private car and railway companies to make possible the shipment of perishable goods to distant markets. Terminal improvements are gradually being made, so as to prevent car congestion and make more certain the rapid handling of large quantities of freight. Spur tracks are built to the mills, factories, shops, and mines adjacent to the main lines, so as to enable direct loading and unloading.

All of these and similar improvements in the freight service are held out to the prospective shipper as reasons why he should consign his freight over one line rather than over another. This results in a rivalry far healthier than that of secret rates and rebates, and if the carriers were given the opportunity to return to their former methods it is doubtful whether many would do so.

III. SOLICITATION THROUGH FREIGHT TRAFFIC DEPARTMENT

Many railroad companies do all the work of freight solicitation through the regular freight department, while others have established industrial departments. Solicitation by the freight department is usually in charge of the General Freight Agent (or agents) or the Assistant General Freight Agents, who in turn are responsible to the Freight Traffic Manager. The responsible officials to whom reports by solicitors in charge of smaller districts are made are the Division Freight Agents. The duties of these offi-

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cials, however, are so diverse that they can personally do but little actual soliciting.

They have under their control a large number of commercial and traveling agents whose sole duty it is to solicit freight. The Pennsylvania Railroad, for example, has district and special freight solicitors. The former are in charge of defined territories and large business centers, while the latter are attached to the offices of the Division Freight Agents, and are sent out to solicit freight wherever it is available within their respective divisions. They correspond generally to the district and traveling salesmen of an industrial concern.

It is the freight solicitors who actually visit the shippers and attempt to sell transportation to them. In the past their chief assets consisted of special rates, rebates, car discrimination, and general discrimination in service. Today they go into the field as skilled salesmen, knowing that their rivals cannot undercut in rates, except at the risk of legal prosecution. Occasionally they can plead lower cartage charges or lower rates as a result of shipping freight by a differential line or over a water route. Their success, however, depends chiefly upon better freight service; upon their ability to point out new markets to a shipper, thus obligating him to ship his freight over their line; upon the prompt settlement of claims; and upon their personal skill as salesmen.

The personal equation has become of paramount importance. The solicitor must have the ability to pacify shippers who have real or supposed grievances; he must "be thoroughly informed as to rates, time in transit, facilities available, and the regulations governing the handling of the freight business by his company, so that he may advise the shipper or the consignee in the transportation of their ship-

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ping business. . . . He must be a ready and sympathetic listener, so that he may ' rejoice with them that do rejoice, and weep with them that weep.' " Just as the friendships formed throughout the course of years are an asset to the insurance agent, so are they to the freight solicitor.

P. D. 1894
ROUTING ORDER

Date _____

Consignee _____

Address _____

Shipper _____

Address _____

Order to _____

Per letter _____

File _____

Received by _____

Shipped to _____


Presented to shipper (date) _____

P. D. 1894 21-103

No. _____ 190

Until otherwise requested, please forward all FREIGHT
for the undersigned via

PENNSYLVANIA RAILROAD

 This connects all previous shipping and routing requests

FORM 1.

If the solicitor fails with the shipper, he may still succeed with the consignee. He is equipped with a blank form which is a model of simplicity. It contains merely the name of the shipper, date, number of the order, signature of the



FORM 2.

consignee, and a request to ship freight over a specified line (Form 1). This is the routing order, and when once he has the consignee's signature affixed to it he has gained his end.

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The consignee is also provided with *stickers* (Form 2), which he affixes to his letter heads when writing to the shipper in order to recall to him the preferred railway. Solicitation from the consignee is often an effective method, but is available only in those instances in which his contract with the shipper has not deprived the shipper of the routing privilege.

The general freight traffic office issues, from time to time, various publications indicating the " industrial opportunities " afforded along a given line, the number of concerns recently located there, and similar information. The work of locating new industries on lines not having an industrial department is conducted both in this way and through the offices of the Division Freight Agents.

It is essential that other branches of the railway service coöperate with the freight solicitor, so that the promises he makes may be fulfilled. The freight claim department speedily examines claims of shippers who threaten to divert their traffic to other lines because of alleged losses. The operating officials pay special attention to car service, spur tracks, rapid delivery, or other items of freight service when the solicitor informs them of a threatening customer. The General Freight Agent may revise his freight rates when the solicitors find such a course essential to maintain or increase traffic.

Various employees and officials of the operating department are directly concerned with freight solicitation. Local Freight Agents, and on some railroads general agents and Foreign Freight Agents, are responsible to the operating department, but in the matter of freight solicitation they report to the freight traffic department. The local agent comes into personal contact with shippers and consignees more frequently than does any other railway employee. He

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is held partly responsible for the showing made by his station. Similarly, it is the duty of the general agent located in a large city to see that freight is routed over his line and to be a solicitor as far as practicable. In these and other ways the general agents are jointly controlled by the traffic and transportation departments. The Foreign Freight Agent solicits export and import traffic.

IV. THE INDUSTRIAL, LAND, AND IMMIGRATION DEPARTMENTS

A more recent movement in the field of freight solicitation is the establishment of an industrial department. Instead of intrusting the work of locating new industries to the Division Freight Agents, a new department is created. As stated in a letter to the authors by Mr. Luis Jackson, the Industrial Commissioner of the Erie Railroad and one of the pioneers in the movement, "the industrial department was established to focus industrial information, to advise with manufacturers of specific products as to suitable location, and to furnish them with current information of a comprehensive nature dealing with the project in its full relation to manufacture and commerce. The industrial department, in addition to giving information to manufacturers, keeps its own railroad officials advised as to the resources of the territory, and, by having one official concentrate his attention to such resources and development and to disseminating information about the same, all other officials secure a larger industrial grasp of the railroad as a whole. The general officers, with their numerous current duties, have not always the time to go into the merits of or methods to secure specific industries."

The first industrial department in the United States was established January 1, 1891, by the Chicago, Milwaukee & St. Paul Railway. Since then many railroads have taken

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similar action. Sometimes, as in the case of the Baltimore & Ohio, the industrial agent is an official of the freight department, but usually there is a separate department with an industrial commissioner at its head. His specific duty is to locate industries adjacent to the line, so as to increase its traffic.

The industrial department is an extensive statistical bureau, to which manufacturers and railway officials can go for definite information as to the location of industries. The commissioner, moreover, goes out to seek prospective manufacturers and presents them with data showing the opportunities presented by the road which he represents. He has detailed information relative to the available raw material, total production of given commodities, number of factories and the number of their employees, exports and imports, population of towns, local prejudices, labor supply, nationality of the people, living expenses, death rates and state of health, banks and loan associations, taxes, fuel and water power, climate, warehouses, freight rates, side tracks, terminals, land leases, and available markets. He negotiates with all the different departments involved in the location of an industry. He observes industrial changes, studies the management of industries so as to be able to talk intelligently, studies human nature, forms friendships, and organizes commercial clubs and associations to overcome local jealousies and hatred.

To accomplish its ends, the industrial department cooperates with many other departments. As is stated by the industrial agent of the Delaware & Hudson: "The traffic department supplies, on an instant's notice, any kind of data required in regard to rates. The transportation department is always ready with prompt and useful information as to the movement of trains. The engineering depart-

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ment coöperates in the matter of side tracks. The accounting department facilitates the adjustment of claims. The mechanical department offers valuable suggestions to manufacturers with reference to equipment. The geologist supplies the analysis of ores and minerals. In addition to these various departments, there are hundreds of agents representing the railroad company in the local territory, as well as a large soliciting staff in foreign territories. Every man is trained to be alert in anything industrial. From one end of the line to the other the railroad company's representatives feel the thrill and interest of the industrial movement. Monthly, and sometimes oftener, the agents are called upon to report fully all the industrial conditions at their respective stations. All of these records are carefully tabulated and kept on file for future use."¹

Aside from the information kept on file for use in specific instances, many industrial departments issue standard bulletins, usually entitled "Industrial Opportunities," stating the special facilities offered by a given railroad, the resources available, special opportunities, a complete list of towns, with the leading industries and possibilities of each, and similar information. Some industrial departments issue annual statements showing the total number of industrial establishments actually located on their lines and emphasizing the great diversity in manufactured products. Many also publish "industrial maps" showing graphically the natural resources located along given railways.

Frequently the industrial department has not only to do with manufacturing industries, but is concerned also with agriculture, lumbering, dairying, and with securing settlers. Immigration departments, according to Mr. Luis Jackson,

¹ "Freight," Sept., 1909, p. 264.

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had been in existence on some lines for over twenty-five years before industrial departments were introduced. Land departments have, likewise, been in existence for a long time. The larger railways usually keep these departments distinct from the industrial department, but require close coöperation. Their work is so interrelated, however, that on some of the roads in the West and Southwest the immigrant and industrial departments are combined into one, and on others there is a combined land and industrial department. On some roads the industrial commissioner is further allied with a mineral agent, and on others with a dairy and agricultural agent.

In some cases the combined department is in charge of one agent or commissioner, but his duties extend beyond the manufacturing industries. The industrial commissioner of the Missouri, Kansas & Texas, for instance, has done much to promote agriculture and fruit and vegetable growing. He has gone so far as to bring hundreds of buyers to Texas, so as to create a market; he has instructed the growers how to pack, load, and mark their products; he has established agencies to examine the products after they arrive at the markets, so as to avoid fraud on the part of the buyers; he has advertised the products to be sold; and, at times, he has actually sold them at the highest price without cost to the growers.

V. AGRICULTURAL EDUCATION

Agricultural education as a means of traffic development may be conducted by the passenger, freight, industrial and agricultural, land, or immigrant departments; but the principle in each case is obvious. The purpose is to increase both the freight and passenger traffic by increasing population and production in the farming communities.

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A favorite method of some railways has been to equip "agricultural trains" and to send them through the farming communities. Usually the railways work in connection with the agricultural colleges or agricultural experiment stations of a state, the railway furnishing the cars for transportation and bearing the general expenses, and the colleges furnishing lecturers, printed information, and specimens. One car is usually given over to specimens of grain and other products, with labels showing "how and where they were raised, the quality of the soil, kind of fertilizer," etc. Another car will contain specimens of insects and other pests; another will include an exhibit of farming machinery and tools; and still another car will be equipped with a lecture platform and seats, so that the college professors may talk to the interested farmers. In dairying communities a special dairy exhibit car is included.

The county fair affords another field for the railway traffic man. Exhibits similar to those on agricultural trains can be made, and experts can be stationed there to explain the exhibition to the farmers. Of the same nature is the instruction given by agricultural and industrial commissioners to fruit growers in methods of growing and preparing fruit for the market. The circulars and booklets issued by the passenger departments of western railroads are a part of agricultural education, and affect the freight as well as the passenger business.

VI. MISCELLANEOUS METHODS OF DEVELOPING FREIGHT

There are many other ways and means of developing freight, some of which may be briefly noted. Fast freight lines, as has been explained in Chapter XIII, are soliciting agencies. They are through routes, and their managers advertise them as such. They, moreover, have agents scattered

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throughout a wide territory to solicit freight and consign it over the route represented by a given fast freight line. Such agents are in reality employees of the parent railways, but they are sent out by the manager and superintendents of the freight lines and are given orders by them.

The relations between the granger railways of the West and the terminal elevator companies indicate another method of developing freight. Originally many of these elevators were owned and operated by the carriers centering at the primary grain centers. In the early 80's they made a ruling that grain would be inspected in the cars and shipped on without unloading at the grain markets. They soon discovered that this threatened the position of Chicago as a grain center; but, in the face of public demands and the Interstate Commerce Act, they did not see fit to rescind the ruling. The granger railways, therefore, sold or leased their elevators to large grain dealers. These concerns then, being both elevator owners and grain dealers, saw fit to have as much grain as possible enter their elevators at Chicago. This is an instance in which the self-interest of outside concerns practically made them solicitors for the grain roads centering at Chicago.

Lastly, the passenger traffic department, in sending out great quantities of circulars, booklets, and descriptive literature for the purpose of inducing settlement in new territory, tends to develop the freight as well as the passenger business. The development of passenger traffic will, however, be discussed in a later chapter.

Most freight solicitation may have two objects—to divert traffic from a rival railway, or to create new traffic. Both of these purposes are constantly borne in mind, but it is because of the extraordinary success with which many lines are accomplishing the latter that the traffic of so many rail-

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ways is rapidly growing. Mere diversion of freight from one to another is to the interest of the successful line, but the creation of new traffic by the construction of factories and mills, the opening up of mines, and the establishment of farms, is to the interest of whole communities.

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PART III

FREIGHT CLASSIFICATION AND RATES



CHAPTER XVII

FREIGHT CLASSIFICATIONS AND TARIFFS

Past development of classifications—Principles of—Present classifications and their construction—Uniform classification—Class tariffs—Commodity tariffs—References.

IN quoting a rate on classified traffic the Freight Agent uses two distinct publications—the “classification book” and the “freight tariff.” In the former the thousands of articles not granted commodity rates are grouped into classes, this being done in order that goods in the same class may be charged the same rate. In the “freight tariff,” or rate book, the rates by classes to and from given points are stated. In billing a shipment of boots and shoes, for example, the agent, if he does not know offhand, consults the classification book to see in what class boots and shoes fall. He then turns to the “tariff” sheets and finds the rate applicable to that particular class from his station to the point to which the shoes are billed. Rates computed in this way are “class rates.”

In addition to the class rates there are others upon a long list of articles not classified but given “commodity rates.” In the shipment of such traffic, the agent turns direct to the “commodity tariff,” in which the rates on specified commodities between given points are quoted.

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PAST DEVELOPMENT OF CLASSIFICATIONS

The practice of classifying freight is very old. On the early wagon routes, freight was very crudely classified into light and heavy articles, the former paying by the cubic foot and the latter by the hundred pounds. In the schedules of tolls upon the early English and American canals more detailed classifications were made. The pioneer American railroads naturally adopted, with modifications, the freight classifications of the canal companies.

The early development of classifications by the railways was not along definite lines, and was undertaken independently by the various carriers. As late as 1855, for example, the South Carolina Railroad issued a document which was at once a classification and a tariff. Four classes were specified, the rates on the articles in the first being so much per cubic foot and, on the other three, designated charges per hundred pounds. In addition, "agricultural implements, molasses, liquor, barrels, lime, flour, cotton, grain, salt, chairs, carriages, and live stock" were separately listed, and the charges were so much per implement, cask, hogshead, tierce, sack, bushel, bale, barrel, or other customary unit of measurement. Special rates, moreover, were granted to wood, lumber, bricks, and naval stores, the rate being, respectively, so much per cord, per thousand, or per barrel. "Miscellaneous rates" were granted to certain commodities unsuited to the general classes.

Less than 300 items made up this entire document, and, according to Noyes, some classifications as late as 1856 contained but thirty-three items. The small number of classes in most of the early classifications is likewise noticeable, and the early practice was to combine classification and tariff. McPherson states that the first tariff of the Louis-

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ville & Nashville Railroad included three groups, and early New England railways specified "first class" and various "special" articles. Much later than this some companies had four classes of freight and various "specials," the practice of the trunk lines being to classify commodities differently when east-bound than when west-bound. Nearly all lines, moreover, had their own classifications applicable to local traffic and to all through traffic not covered by joint classifications. At one time there were 138 distinct classifications in eastern trunk line territory, and shortly prior to the enactment of the Interstate Commerce Act there were 130. No shipper, unless he was a rate expert, could determine in advance what his rates would be or what rates were supposedly paid by his competitors.

Definite action for greater uniformity began in the early 80's, when a demand for through routes, through waybills, and through rates arose; and the private fast freight lines were superseded by coöperative and company lines. The prohibition of unreasonable discrimination by the Interstate Commerce Act of 1887 and the rulings of the commission stimulated the movement. It was recognized by the railroads that they could not observe the law without establishing greater uniformity in freight classifications.

As a result of extended negotiations, the lines operating in trunk line territory on April 1, 1887, adopted the Official Classification. By 1889 the lines south of the Ohio and east of the Mississippi had adopted the Southern Classification, and those west of the Mississippi the Western Classification. These three classifications are supplemented or displaced by others only in exceptional regions. In the States of Florida, Georgia, Illinois, Iowa, Louisiana, Mississippi, Minnesota, North Carolina, Nevada, Texas, and Virginia separate state classifications applicable only to intrastate traffic have been

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established. The Transcontinental Freight Bureau has no classification of its own, but issues a combination classification and tariff, based on the Western Classification, applicable to certain classes of transcontinental freight.

PRINCIPLES OF CLASSIFICATION

The primary purpose of classification is simplicity. At present the three great classifications contain over 21,700 separate entries. To construct tariffs so as to specify rates for thousands of articles individually between all the different points usually named in a tariff would be hopelessly confusing. To group them into a limited number of classes, with common rates for all items in the same class, vastly simplifies the matter. It enables an agent to quote accurately through rates between any specified points on any one of the thousands of classified articles with a minimum amount of computation. It also enables the shipper to get his rates in advance and, in the absence of rebates, to determine those of his competitors. There is some difficulty, even now, because, for some shipments, more than one classification is involved in quoting a through rate, but compared with the situation prior to 1887 it is infinitely simpler. Moreover, it facilitates through service, to the mutual advantage of carrier and shipper, because of the intimate connection of classification with through rates, through routes, and through billing.

There are many factors to be considered in the construction of a classification. The Interstate Commerce Commission has ruled that class grouping "must be based upon a real distinction from a transportation standpoint." The most important single factor is the value of the article, those of high intrinsic value being placed in high groups, and *vice versa*. The commission recommends the value principle,

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but has ruled that it cannot in all instances be the deciding factor. Cost of service is frequently preëminent, as in the case of cotton, hay, and other bulky articles when contrasted with iron. Risk is foremost in the case of glass or other breakable commodities. As stated by the commission in its annual report for 1897, the classification committees "take into consideration whether commodities are crude, rough, or finished; liquid or dry; knocked down or set up; loose or in bulk; nested or in boxes, or otherwise packed; if vegetables, whether green or dry, desiccated or evaporated; the market value and shippers' representations as to their character; the cost of service, length and duration of haul; the season and manner of shipment; the space occupied and weight; whether in car load or less than car load lots; the value of annual shipments to be calculated on; the sort of car required; whether flat, gondola, box, tank, or special; whether ice or heat must be furnished; the speed of trains necessary for perishable or otherwise rush goods; the risk of handling, either to the goods themselves or other property; the weights, actual and estimated; the carriers' risk or owners' release from damage or loss."

In general, the factors controlling class grouping are similar to those which determine freight rates, but in at least one respect they differ. Classification merely ranks commodities with relation to each other; while, in making rates between different points of shipment, business and competitive conditions are often paramount, although they are of minor importance in the classification of freight.

PRESENT CLASSIFICATIONS AND THEIR CONSTRUCTION

The three great classifications above mentioned—Official, Western, and Southern—are limited to definite territories. The Official applies to traffic within the region north of the

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Ohio and Potomac rivers, including New England, and east of a line roughly drawn from Chicago to St. Louis and the junction of the Mississippi with the Ohio. The Western applies to the region west of Lake Michigan, the Mississippi River, and Official territory; while the Southern applies east of the Mississippi River and south of the Official territory. Occasionally, however, these classifications overlap. At times an article shipped from a point in one territory to a point in another is governed by but one classification, sometimes that of the point of origin and at other times that of the place of destination. The confusion arises particularly in the shipment of goods to or from a point located comparatively near a classification boundary. St. Louis, for instance, uses the Official Classification for east-bound freight, the Western for west-bound, the Southern for south-bound, and the Transcontinental tariffs for Pacific coast freight.

The three large classifications are not made directly by the carriers, but by classification committees. Each interested railway appoints one of its traffic men, usually the Freight Traffic Manager or General Freight Agent, as its representative. These persons then select a permanent sub-committee composed of traffic men, representing as many different communities and as wide an area as possible. This committee consults carriers and shippers and does the actual work of construction and revision. It has a permanent chairman and secretary, who are always ready to receive requests for changes or additions in the classifications. The large amount of work done is indicated by the frequency with which the classification book is revised. The Official Classification book has thus far had thirty-five issues, the Southern thirty-five, and the Western forty-four. In addition, supplements are frequently published, usually two, before a new classification is issued. The Western Classifica-

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tion Committee makes from 100 to nearly 500 changes and additions each year. The classifications, as made by the committees, are accepted by a multitude of railway, steamship, and transportation companies—the Southern by over 170, the Western by over 480, and the Official by over 540.

The Transcontinental Freight Bureau, with headquarters at Chicago, issues two general and many special tariffs, east-bound and west-bound, which apply to freight shipped to and from the Pacific coast. They are governed by the Western Classification. The larger share of the articles is exempted from the classes and given in commodity rates. With the Western Classification as the standard, the bureau divides the eastern three fifths of the United States into territorial "rate groups," as explained in Chapter XXIV. Rates to or from all places in any "rate group" territory are identical, and vary but slightly as distance increases eastward and westward of each common point territory. The commodity tariff on west-bound traffic is, with few exceptions, a blanket tariff, with the Missouri River as the dividing line. The tariffs also distinguish between "terminal" and "intermediate" class and commodity rates, the former being applicable to and from the Pacific coast ports specified, and the latter to and from inland points located on the subscribing lines converging at the coast terminals. A fuller explanation of transcontinental tariffs is given in Chapter XXIV.

The three main classifications differ materially from each other in the number of classes and the rating of particular commodities. The Official Classification contains six numbered classes and two "rules." Rule No. 25 includes articles rated at fifteen per cent less than second class, and Rule No. 26 includes those rated at twenty per cent less than third class. Some articles, moreover, are classed as $1\frac{1}{2}$, $1\frac{1}{2}$,

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2, $2\frac{1}{2}$, 3, or 4 times first class, so that in reality there are fourteen classes, and they contained 10,087 separate items in 1909, the number increasing with each issue of the book.

The Southern Classification contains thirteen classes—six numbered and seven lettered—and aggregates 4,273 items. It, however, also rates some articles as $1\frac{1}{2}$, 2, 3, or 4 times the first class, so that there are really seventeen classes. This classification, moreover, contains a list of “exceptions” which are differently rated on particular railways. The Western Classification contains ten classes—five numbered and five lettered—and numerous commodities are rated at $1\frac{1}{2}$, 2, $2\frac{1}{2}$, 3, $3\frac{1}{2}$, or 4 times first class. It therefore practically has sixteen classes, aggregating 7,419 items.

In addition to differences in the number of classes and the ratings of the various commodities in them, the three classifications differ as to car load ratings. In the Official Classification the car load ratings number 72 per cent of the less than car load ratings; in the Southern, 22.1 per cent; and in the Western, 29.8 per cent. In the Official Classification but 1.25 per cent of the less than car load items are below fourth class, and in the Western none; while in the Southern 33.9 per cent are in the fifth, sixth, and lettered classes. These differences are of the utmost importance to jobbing centers.

There are also wide differences in car load minima. Unless otherwise specified, the minimum weight in flat, gondola, stock, or box cars, as fixed by the Official Classification Committee, is 30,000 pounds. For individual articles, however, a great range is specified. Church furniture, for instance, is rated at 10,000 pounds, school furniture at 24,000, copper bars at 36,000, and wheat at 40,000 pounds. The general rule of the Western Classification Committee provides that no car load rated at third class or higher is to be accepted at

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less than 20,000 pounds, and none rated as lower than third class at less than 30,000 pounds. The specified weights for particular articles, however, vary greatly. The general rule in the South is 24,000 pounds, but is likewise modified in specific instances. Each classification committee, moreover, has adopted a rule defining the dimensions of a standard car and stating the increase or reduction in allowable minimum car load for such cars as are of greater or less dimensions than the standard.

The classification committees likewise promulgate codes of rules as to the packing of merchandise, advance charges, liability for loss or damage, gross and estimated weights, payment of icing charges, marking shipments, minimum charges accepted, and similar matters. The Official Classification also requires the use of the uniform and export bills of lading and uniform live stock contract, the provision being that shippers who do not accept this billing must pay ten per cent higher rates. In numerous particulars the rules differ materially in the various classifications.

The establishment of classes, the classification of freight, the fixing of car load minima and rating, and the promulgation of rules constitute the work of the classification committees, and indicate their close connection with freight rates and service. Classifications do not contain rates, but the shifting of an article from one class to another is an indirect way of increasing or decreasing charges. Usually, also, the increase of the car load minimum virtually means an increase of rates to the small shipper and retail buyer.

UNIFORM CLASSIFICATION

The close connection between rates and classifications, the confusion arising in the shipment of freight from the territory of one classification to that of another, the clause

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of the Hepburn Act of 1906, and the Mann Act of June 18, 1910, providing for through rates and routes, and the efforts of the Interstate Commerce Commission and various railway officials, have repeatedly brought forward the movement for a uniform classification for the entire country. The main obstacle is that the three great classifications of to-day rest upon industrial and traffic differences. Commodities of prime importance in the traffic of one section may be of relatively little importance in that of another. Business practices vary in different localities; carriers differ as to the restriction or extension of car load ratings; and the introduction of uniformity in classification would at least temporarily disturb both industry and railway rates.

So obvious, however, are the advantages of uniformity that in 1908 the carriers, in agreement with the Interstate Commerce Commission, appointed a committee to investigate the question thoroughly. After much discussion, the committee reported that a uniform classification could be introduced only gradually as conditions become more uniform. If established at once, so many exceptions would be demanded by the subscribing carriers that the confusion would be as great as, or greater than, at present. The committee, however, reported in favor of unification of minimum car load weights, of descriptions of articles, and, with one exception, of classification rules. To accomplish these results a special executive committee of traffic officers was appointed.

CLASS TARIFFS

The "class tariff," or rate book, specifies the rates to be charged on each class of commodities between given points. The classification book states no rates while the tariff specifies no commodities. The classification is made

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by special committees, while the tariffs are usually made by the railways themselves, although in some instances the rates are virtually decided upon by the officers of traffic associations acting as agents for the subscribing lines.

Class tariffs are *local* and *joint*. The former are issued by an individual railway for its classified traffic between local points; the latter are jointly issued by a railway company and its "foreign" connections. In form they differ only in that the joint tariff specifies the through rate.

If a shipper desires to ship a car load of fire brick from New Orleans to Shreveport, Louisiana, the agent of the railway first ascertains from the Western Classification that fire brick in car load lots falls in class D. He then turns to the class tariff and finds that the rate from New Orleans to Shreveport on class D is twenty cents per hundred pounds, which rate he quotes to the shipper. If the shipment is made from New York to Shreveport, the shipping agent must first see whether a joint through rate is in effect; if so, it would govern, otherwise the agent will quote the rate on class 6 (Official Classification) to St. Louis, and the charge on class D (Western Classification) southward to Shreveport, or what is known as a "combination of locals."

COMMODITY TARIFFS

A large number of special commodities is specifically exempt from the classifications and shipped under "commodity rates." As a rule such rates apply to heavy bulky articles moved in large quantities. In quoting commodity rates, the agent turns directly to the "commodity tariffs" which contain the rates on such articles. Many commodity tariffs are elaborate. A railway may have arrangements with numerous companies for the through shipment of an

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important commodity and its tariff book must show the rates to hundreds of stations. Other "commodity tariffs" specify the rates merely to a few basing points, and state the sums to be added in order to determine the rates to other regions. In shipping agricultural implements, for instance, from Chicago to Texarkana, Texas, the "Southwestern Lines Tariff" is used. The basing rate is that from "St. Louis-Kansas City Territory" to Texarkana (fifty-three cents in 1908). To this is added a so-called "differential" (nine cents in 1908) from "Chicago Territory" to Kansas City, the through rate being the sum of the "basing" and "differential" rates.

Classifications, "class tariffs," and "commodity tariffs" are the special work of the traffic department of railways. For the most part each company must work out its own rates independently of others; but as regards through and competitive traffic and the classification of all freight the railways must coöperate. The manner in which they work together is explained partly in this and partly in other chapters.

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CHAPTER XVIII

RATE MAKING

I. OFFICIAL MACHINERY

Classification of traffic first step—Rates are made by General Freight Agent and by subordinates—Functions of Traffic Vice President, Traffic Manager, General Freight Agent, Division Freight Agents, freight solicitors, and local agents in rate making—Other officials concerned in making rates—Rate agreements illegal.

THE classification of freight is the first step in rate making; the second, and more difficult one to take, is the determination of what the charges shall be per hundred weight for each class of goods and for the large number of unclassified individual commodities. A single classification applies to a large territory, there being three for the entire United States; but the rates must be worked out for the traffic of each city, or at least of each section, with every other city or section served by the railway company making the rates. The same classification book is found in all freight offices east of the Mississippi River and Lake Michigan, and north of the Ohio and Potomac; but rate books and sheets must state the charges from each city and "common point" section on class freight when shipped in less than car load lots or in car load quantities, and also give the rates on those commodities not included within the classification. Every company must prepare a large number of "class tariffs" and "commodity tariffs," to cover the

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freight handled between points on its own lines; and in addition to these "local" tariffs, it must enter into a host of "joint tariffs" with other companies, applying to through traffic delivered to or received from connecting carriers by rail and water.

The construction of rate schedules and the task of making such amendments and additions to the schedules as are required to keep the rates adjusted both to changing economic conditions and to the ever-varying exigencies of competition, and the doing of this in such a way as to assure the company ample net revenues, constitute a complicated problem. It is the purpose of this and the two succeeding chapters to describe the methods or machinery of rate making, to analyze briefly the competitive forces that must be reckoned with in making rates, and to consider the several factors, other than competition—cost of service, distance, value of the service and of the articles, capitalization or fixed charges, and government regulation—that influence in varying degrees the decision of traffic officials as to particular charges and as to general rate policies.

The making of rates requires the services of a large and well-organized corps of expert officials and employees. The administrative organization by which the work is done varies somewhat with different companies; but the practices of the several railways have enough similarity to permit of making this account of the machinery of rate making a general one applicable, with minor exceptions, to all companies.

Usually the official rate maker is the General Freight Agent. Every rate sheet is issued over his signature; but the actual working out of the rates may be either under his general direction or be under the supervision of the Assistant General Freight Agent. On some lines, however, the traffic is so large that the work of making rates has been

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subdivided. The Pennsylvania Railroad, for example, has a General Freight Agent of Through Traffic, a General Freight Agent of Local Traffic, and a General Coal Freight Agent, who are separately responsible for making rates for the traffic over which they have jurisdiction.

Over these rate makers there are higher officials, with power to overrule any rate schedules, but who usually act only in a supervisory capacity. The largest companies have a Freight Traffic Manager, to whom the General Freight Agent is subordinate. In deciding difficult rate questions the Traffic Manager will be consulted, although he will, so far as practicable, confine his attention to deciding what rate policy had best be pursued, to such questions as the advisability or unwisdom of an increase or decrease in charges, and to advising the Traffic Vice President where the company had best seek to develop traffic. While the Traffic Manager may instruct the General Freight Agent or Agents concerning specific rates, his chief services are those of assistant to the Vice President in charge of traffic.

The Vice President at the head of the traffic department may not only overrule both the General Freight Agent and the Freight Traffic Manager in matters of rate policy, but he may occasionally make rulings as to individual rates. This, however, would be exceptional; the duties of the Traffic Vice President are so numerous and his responsibilities so great that he must needs leave details to others and confine his thought mainly to the larger questions of rate policy, and to a study of the effects which rates have upon total traffic and total earnings. If the results being produced are not satisfactory, the causes must be ascertained, and such changes must be instituted as will correct the situation. The company holds the Traffic Vice President accountable

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for results; he must work through his subordinates, but he must guide their course with a clear grasp of the methods to be followed. The most troublesome matters will be referred to the President of the company for final decision; and the President may call upon the Board of Directors to decide whether there shall be a general increase or decrease of rates.

The General Freight Agents and their supervisory officers are aided by a large number of minor officials and employees, who furnish information and make recommendations. Immediately subordinate to the General Freight Agent and Assistant General Freight Agent are the Division (or District) Freight Agents, who "diagnose the case in the first instance." They study the rate situation from the standpoint of local conditions; they know what is shipped at various points on their divisions; they understand the causes of any fluctuations in traffic, and they are personally acquainted with many shippers.

Each Division Freight Agent decides what he believes the rates in his district should be and recommends accordingly to the General Freight Agent. The recommendations are taken as preliminary quotations, and are usually adopted unless found to be opposed to the best interests of the railway as a whole. Information is constantly being sent in writing; and on a large system scarcely a day passes upon which some Division Agent, or his representative, is not in personal consultation with the General Freight Agent.

The freight solicitors are a second source of information—sometimes called traveling agents, commercial agents, or contracting agents. They are virtually railroad traveling salesmen, going from shipper to shipper soliciting patronage, studying local conditions, and deciding with

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reference to various kinds of commodities "what the traffic will bear." The information they are able to give their superiors is of great assistance in deciding what the charges shall be.

The local freight and station agents are, likewise, able to give most important assistance. The station agents come into daily personal contact with the shippers, hear their complaints, and know their desires. The local agents make recommendations to their Division Freight Agent, and, when called upon to do so, they make reports to the General Freight Agent. A full understanding of local conditions is essential to intelligent rate making—a fact that will be emphasized in the discussion of the factors considered in making rates.

In the larger cities there are not only the Local Freight Station Agents, but also General Agents, whose duties are similar to those of a Division Agent, but who have a more intimate knowledge of the industrial and traffic conditions prevailing in their more limited field. Their information is of great assistance to the Division and General Freight Agents. The chief functions of the General Agent in a large city are to hold traffic for his company against competitors and to bring about the development of the tonnage handled over his lines.

In addition, some lines, both eastern and western, but particularly those in the newer sections of the West, have Land Agents or Industrial Agents, whose prime duty it is to promote the establishment of, and to build up, industries along their company's lines. They are in a position to know what the rates must be in order to accomplish their end, and are therefore consulted in the making of rates for the regions with which they are familiar.

The railway systems operated in connection with water

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routes, moreover, look to the managers of the vessel lines for detailed information and recommendations as to rates on traffic carried partly by rail and partly by water. Most of the trunk lines have steamship lines on the Great Lakes, and through rates by combined rail-and-water carriers are worked out jointly by the agents of the railway and steamship lines. Similar relations exist between rail-and-water carriers on the Pacific seaboard, and to a less extent along the Atlantic and Gulf coasts.

To some extent the Traffic Department goes beyond its own officials and employees to acquire the necessary information. To ascertain the approximate cost of operation it becomes necessary to consult the Operating Department; while the Interstate Commerce Act and numerous state laws and rate schedules make necessary the assistance of the Legal Department. The General Agents and Local Freight Agents, moreover, are attached to both the Operating and Traffic departments.

Rate making is thus the joint activity of a large body of trained men. Even the higher rate officials do not work independently. The General Freight Agent, for example, consults the Coal Freight Agent, because coal rates cannot be made without considering their effect upon the traffic in manufactures, and *vice versa*. Both of these officials frequently consult the Freight Traffic Manager and the Vice President in charge, and both look to the Division Freight Agents and other traffic officials. Although the rate sheets are issued by the General Freight Agent, they reflect the combined knowledge of many persons.

The process of rate making above outlined prevails, with slight modifications, on all railways. It is not to be inferred, however, that the various railway companies act independently of each other. The necessity of re-

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straining competition has forced railways to unite in freight traffic associations. Here the General Freight Agents, or similar officials, of the competitive lines meet to consult with each other. Legally and technically each line makes its own rates, but actually the competitive rates are decided upon after the rate makers of all interested lines have conferred and informally agreed. The traffic association is the organization by means of which the rate policies of the many companies operating within a large competitive area are so harmonized as to avoid the chaos that would result from the warfare of unregulated competition.

Since the decisions of the Supreme Court in the Trans-Missouri Freight Association and Joint Traffic Association cases in 1897 and 1898, formal agreements of railway companies as to competitive rates and their maintenance have been a violation of the Sherman Antitrust Law of 1890. Fortunately for the railroads and for the general public, the carriers have been able, by informal understanding, to establish, and usually to maintain, common or mutually satisfactory differential rates on that portion of the traffic which must be shared among the rival lines, although each company would like to secure the entire tonnage. It is to be hoped that associated action in the making of competitive rates—something which everybody who understands the question recognizes to be a necessity—will soon be made legal; and if all rates made by common action of the carriers and all agreements concerning such charges are made subject to the regulatory control of the Interstate Commerce Commission, the public will certainly be fully protected against unduly high or unjustly discriminatory rates.

CHAPTER XIX

RATE MAKING

II. COMPETITIVE FACTORS

General economic laws to which rates are subject—Industrial and commercial competition as a factor in rate making—Inter-railway competition—Competition of waterways with railroads—References.

RAILROAD rates are, to a large extent, the resultant of competitive forces. In part the competition is of carriers with each other for traffic free to move by more than one line; and, in a still larger way, the competition is between industries and among rival producing or trading centers and sections. If a railroad company is to prosper, the industries along its lines, the section of country it serves, and the markets it reaches must flourish.

This is but another way of stating what is so often said, that railway rates must be such as "the traffic will bear" and traffic still increase in volume. The public has often assumed that charging what the traffic will bear is synonymous with a policy of making the rates as high as it is possible to exact of the shipping or traveling public at any and all times; whereas, as a matter of fact, the result of charging what the traffic will bear may produce a level of charges appreciably below the maximum that might be obtained.

Railway transportation is a business of "increasing re-

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paving blocks from Georgia, Wisconsin, and North Dakota
are sold in the same markets: while Michigan potatoes,

are sold in New York
region.

Regional competition in
finished product must
with similar goods from
and coal must be hauled
allow all industries to
owing to one railway for
adding competition be-
exert a constant regu-
lation.

The same forces of com-
petition. The Gulf ports compete
for grain exports of the
strive with each other
to compete with those of the
interior; New Orleans
Birmingham competes with
South Atlantic cities.
St. Louis, Milwaukee, and
they seek each to secure
the crop. Chicago, St.
is a primary meat mar-
ket. West. In connection
there is a market rivalry
existing.

of commercial compe-

tion. Freight rates are to a large extent interdepend-
ent. To change an unimportant rate may require the modi-
fication of but a few others, but to raise or lower the rate
on wheat from Chicago to New York may require the read-

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turns " or " diminishing costs," and as a consequence traffic officers cannot wisely follow the policy of charging the highest rates possible. They must look to the future as much as to the immediate present, and make rates that will not only move existing traffic, but will develop a greater tonnage for the future. The choice is necessarily between the greatest immediate gains and the greatest profits in the long run. The present-day railroad company does not desire a small volume of traffic at maximum rates, but a great and constantly growing tonnage at remunerative charges. The fixing of rates " at what the traffic will bear " requires the exercise of sound business judgment.

INDUSTRIAL AND COMMERCIAL COMPETITION AS A FACTOR IN RATE MAKING

In determining the rates which the traffic will bear, the General Freight Agent is influenced by many factors. The strongest force is that of competition among markets, or " of interregional, industrial competition." The asphalt of California, for example, competes against that of Texas, the West Indies, and South America in American cities, and railway rates on the California product must be fixed so as to give it a wide sale. Likewise the rates on cotton goods from southern mills are made so as to allow them to find a market side by side with the output of New England mills. California oranges must be given a rate sufficiently low to enable them to compete in the East with those from Florida. Copper from Montana, that from Lake Superior, and that from Arizona must be placed on competitive terms with each other and with foreign copper in the United States market and in Europe. The lumber districts of the South, the Great Lakes, and the Northwest are in active rivalry; marble from Vermont and North Carolina and

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paving blocks from Georgia, Wisconsin, and North Dakota are sold in the same markets; while Michigan potatoes, those of Maine and many other states are sold in New York and other common centers of consumption.

Innumerable instances of interregional competition in manufacturing might be cited. The finished product must be carried to market in rivalry with similar goods from other sections, while raw products and coal must be hauled to the factories at rates which will allow all industries to thrive. Were there no indirect bidding of one railway for the traffic of another, this all-pervading competition between producing regions would still exert a constant regulative pressure upon the level of rates.

Among the markets themselves the same forces of commercial competition are effective. The Gulf ports compete with the North Atlantic ports for the grain exports of the West, and the North Atlantic ports strive with each other for this trade. The Gulf ports struggle with those of the South Atlantic for the cotton of the interior; New Orleans is the rival of Galveston; while Savannah competes with Wilmington, Charleston, and other South Atlantic cities. Chicago, St. Louis, Minneapolis, Duluth, Milwaukee, and the other great primary grain markets seek each to secure the largest possible share of the wheat crop. Chicago, St. Louis, Kansas City, Omaha, and other primary meat markets compete for the live stock of the West. In connection with nearly every great industry there is a market rivalry to which traffic officials must give heed.

It is chiefly because of the force of commercial competition that freight rates are to a large extent interdependent. To change an unimportant rate may require the modification of but a few others, but to raise or lower the rate on wheat from Chicago to New York may require the read-

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justment of many other charges. The rate structure, like a spider's web, is delicately interwoven.

INTERRAILWAY COMPETITION AS A FACTOR IN RATE MAKING

Rival markets and competing producing sections, no matter where located, will be kept on a common level if it is possible for the carriers so to place them. In times past, the efforts of rival railways to secure and hold traffic at a maximum number of competitive centers, regardless of the inequality of the economic advantages possessed by those places, resulted in such glaring and such socially undesirable discriminations as to call for government regulation. At the present time the railways as well as the public realize that artificial limits must often be placed upon inter-regional competition. This very fact indicates the wide range and the relentless severity of unregulated inter-regional competition in industry and trade. Producers, traders, and carriers are each and all inseparably involved in the struggle of economic interests. For this reason chiefly is government regulation of railroads necessary.

The efforts of rival railways to secure traffic free to move by more than one line is a second force influencing the rate maker. Unlike the commercial competition just mentioned, it has become less instead of more powerful; because, as time goes on, it is more largely regulated by the consolidation of competing lines, or by traffic associations, community-of-interest arrangements, and informal mutual understandings. These are the means whereby rival railways have sought to substitute coöperation for unrestrained competition. Interline competition is, however, still a force of no small influence. Consolidation and coöperation have not terminated the efforts of railway systems to hold traffic against each other and to insist on such

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an adjustment of rates as will effect what the several competitors may deem to be a fair distribution of tonnage.

This fact is well illustrated by the perennial strife of the trunk lines over the relative rates to be accorded North Atlantic seaports on traffic to and from the central West. This question was arbitrated by the carriers in 1882, was adjusted by the Interstate Commerce Commission in 1898, and also in 1905; but in 1909 and 1910 the subject was again opened by the refusal of the Boston & Maine Railroad and the Boston interests to continue to accept the import differentials as just to Boston.

The division freight agents, the freight solicitors, and other officials concerned with securing traffic no longer are permitted to cut rates, grant rebates, or to offer shippers any other than the open, published rate; but anyone familiar with their activities knows that the men serving each railway company, each fast freight line, and each lake or coastwise carrier are doing their utmost to get business for their employer and to hold traffic, or to get it away, from the competing lines. The fact that the competition among railroads is in service rather than on the basis of secret rates enables the railways to regulate their struggles so as to prevent most, if not all, rate wars; but regulated competition that stops short of open war may not only be perpetual, but may also be keen, and may be effective in determining both the charges on particular commodities and the general level of rates. From the public point of view, this interrailway competition may not be an adequate regulator of rates; indeed, it may, like interregional industrial competition, lead to arbitrary discriminations that require correction by public authority; but this does not prove the absence or impotency of competition among railroads to secure traffic free to move by more than one route.

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WATER COMPETITION AS A FACTOR IN RATE MAKING

The influence of water competition upon the policy and practice of railway rate making, though less general and less controlling now than formerly, is still a factor of much effect in several parts of the country; and the practical certainty of a general improvement of the inland waterways of the United States indicates that water competition will be more potent in the future than it is at the present time.

The effects upon railway rates of the rates and services of the steamship lines operated along and between our seaboards are far-reaching. The wide range of the influence of ocean competition upon railway rates is well illustrated by the fact that the export and import traffic between the central part of the United States and Pacific foreign countries must be carried by the transcontinental railroads to and from our west coast at rates fixed by the competition of the route via our eastern seaboard and the Suez Canal.

The rail charges into and out of the Southern States and the system of rates that has developed in that section, as will be shown in a later chapter, are largely influenced by the competitive rates and service of the coastwise vessels. Likewise the rates on the transcontinental traffic moving west and east between the Atlantic and Pacific sections of the United States are absolutely controlled by the competition of the water routes via Panama and the Isthmus of Tehuantepec. Moreover, it should be specially noted that water competition not only controls certain specific railway charges, but also exerts much influence upon the general systems of rate making prevailing in different sections of the country.

The steamship and other vessel lines engaged in coast-

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wise traffic along the Atlantic seaboard are to some extent owned by railway companies, but are for the most part independent of the railroads; while on our Pacific coast the opposite is true. However, the effect of the ownership of the Pacific coast lines by the railroads is rather to regulate than to eliminate water competition. The differences between the services performed by railways and waterways cause the two carriers to be competitors; then, too, the railway companies owning the water lines are traffic rivals, each striving to secure an increasing share of the total tonnage seeking transportation.

The Great Lakes exercise an influence upon railway rates and rate making second only to that exerted by the oceans. The package freight lines on the lakes are owned by the railways, but these package lake lines are operated by rival railroads as parts of through competitive routes in order that each railway may secure a share of the large volume of traffic moving east and west on the lakes. The iron ore from Lake Superior, which comprises nearly half the total tonnage moved on the lakes, is transported mainly in vessels controlled by the large iron manufacturers and at rates too low for the railways to compete against. Grain and lumber are carried down the lakes chiefly by competitive common carriers, the competition between the all-rail routes and the lake-and-rail routes to the East being active.

At the time the system of rates now governing the through traffic between the trunk line territory and that of the Central Freight Association was worked out and put into force—in the 70's—the controlling factor was the through water route via the Great Lakes and the Erie Canal, and the system of rates then adopted, which will be described in a later chapter, was largely influenced by the competitive conditions created by the presence of this

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waterway. The influence of the Great Lakes upon railway rates and services is still potent; but the Erie Canal has ceased to have much, if any, effect upon the railways. Its tonnage has declined from 19,300,000 tons for the five-year period 1878-1882 to 11,100,000 for the five years ending in 1907; meanwhile there has been an enormous expansion in the tonnage of the railways that parallel the canal. The traffic of the Erie Canal will doubtless again increase when the improvements now in progress shall have been completed, and its influence upon railway rates will then be greater; but even then the effect which the canal will have upon the railways will not be anywhere near so great as it was in the decades preceding 1880. By the time the enlarged canal is ready for use, or at least within a short time thereafter, both the waterway and the parallel railroads will probably be fully occupied in meeting the transportation demands. In other words, the Erie Canal may be expected to be, what it is to the interest of the public that it should be, primarily a complement and secondarily a competitor of the railroads it parallels.

In former days the Ohio, Mississippi, Missouri, and other rivers were factors of much importance in the regulation of rates; and at the present time they are not without influence upon specific rates and general rate systems, but, speaking generally, their effect is but slight. That this will always be the case is by no means certain. Our principal natural waterways will during the next decade or two unquestionably be given improved channels, their flow of water will be better regulated, and the facilities, other than channels, which contribute to the use of waterways will be established. Moreover, there will be a growing demand for water transportation as population becomes denser and as industry expands. Railway rates in the future will prob-

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ably be increasingly subject to the regulation of waterway competition.

The relatively slight effect thus far exerted upon railroad freight rates by electric railway competition is considered in Chapter XXXVI.

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CHAPTER XX

RATE MAKING

III. THE BASES OF RAILWAY CHARGES

The four forces controlling traffic officials' decisions as to rates—
Three reasons why cost of service is emphasized in explaining rates—Definitions of cost of service—Cost an impracticable and undesirable sole basis of rates—Importance to be given distance in rate making—The transcontinental rates and the Rate Act of 1910—Value of service as basis for rates—Value of articles and rate making—Influence of capitalization upon rates—Government regulation and rate making—References.

IN the actual making of rates the traffic official's decision is ordinarily the resultant of four forces: (1) The charges he makes must have a proper relation to those made by competing roads and routes, and in spite of railway integration there is much actual competition in transportation services; (2) the shipper's interests must be considered—what he can pay for transportation and what charges will permit his industry to flourish and the traffic of the railroad to increase; (3) the carrier's revenues must be safeguarded. As far as it is practicable, each particular rate must cover operating costs and contribute something toward fixed charges and profits, while the rates as a whole must surely be kept on a level that will maintain the company in a prosperous condition. (4) The requirements of the public as a whole must be complied with. In many states maximum rates are fixed by statutes or commissions;

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in other states the commissions have the power to revise particular rates; while the rates on interstate commerce, which is vastly more important than the traffic that does not pass state boundaries, are subject to the revisory control of the Interstate Commerce Commission.

In studying the shipper's interests and the carrier's needs, the maker of rates will endeavor to discover the bases of fair and profitable charges. The rate, it is needless to say, is a certain sum per hundredweight, ton, or car load; the charge differs for various classes or kinds of commodities, and is usually greater for long than for short distances. The charges are influenced by several factors other than interline competition. The purpose of this paper is to consider briefly the more important of those forces.

COST OF SERVICE AND DISTANCE AS FACTORS IN RATE MAKING

In all discussions as to what should be the basis of railroad charges much attention is naturally given to the cost of the service. Three reasons readily account for this:

(1) In all lines of business the scale of prices for services and commodities is fixed with relation to costs. Whatever charges are decided upon, they must, first of all, cover all expenses, and, secondarily, they must, if possible, yield satisfactory business profits. We are so accustomed to this way of thinking about prices that we are wont to apply the same line of reasoning to railway charges, although, as will presently be shown, precise conclusions as to what a rate ought to be can seldom be reached solely by this method.

(2) With definite fixed charges to meet and with operating expenses whose amount is largely beyond control, the railway management must constantly strive to make its revenues exceed its total expenses. Moreover, in seeking for new business, in soliciting traffic, there is no escaping

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the questions, What will it cost to handle this new business? and How much better off will the company be if the traffic is secured? Thus it is that the traffic officials are constantly concerned with the costs of services, although they and everyone must recognize the fact that railway charges for particular services cannot be based solely nor mainly upon costs.

(3) The government, through commissions and courts, insists that rates must be reasonable, and in deciding what are fair charges these bodies always have and always will inquire both as to the capital costs which the rates must cover and as to the measurable operating costs incurred in handling the particular traffic concerned. Courts and commissions will also seek other information to aid them in reaching a just decision as to the reasonableness of rates, but neither public tribunal nor railway defendant will ignore costs in passing upon the reasonableness of specific freight and passenger charges.

In spite of these facts, however, it is none the less true that costs of service cannot be measured with sufficient accuracy to be made the exclusive basis of either class or commodity rates; and if the company's entire expenses could be exactly subdivided in such a way as to cause each transportation service to contribute its true share of the expenses—if, in other words, the charge for each service could be based on costs—it would be as unwise for the company, as it would be disastrous to the public, for the railway to fix its rates and fares strictly according to costs. These two statements require brief analysis:

The word "cost" as applied to railway services has several meanings, and in order to discuss the relation of cost to railway rates it is necessary to keep these several meanings clearly in mind. The general public ordinarily.

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includes in the term cost all the expenses properly chargeable against services—i. e., interest on the capital employed, outlay for maintenance of plant, for insurance, for wages, and for other operating expenses, together with the usual business profits. A second sense in which cost is often used is synonymous with operating expenses—i. e., the railway company's outlay other than that which goes to remunerate capital. When the word is used in this meaning the railroad is thought of as being in existence, and the costs of the service are held to be the equivalent of the expenses of operating the plant. A third use of the term cost is to cover such additional expenses as may be incurred in performing a particular service; in other words, the outlay that would not have been incurred had a particular shipment of freight not been made. The traffic official seeking to secure new tonnage for his line is very apt to use cost in this third sense; for he must carefully estimate whether the rates at which he proposes to take the traffic will or will not yield a revenue sufficient to place his company in a better financial position than it would have been had he not taken this particular freight and incurred the additional expenses involved in performing the service.

In whichever of these three meanings the term cost is used, it is impossible for a railroad official to determine exactly what share of the company's expenses are to be charged up to any particular transportation service. If a railroad company carried but one kind of traffic and handled that traffic only in full car load lots, it would be possible definitely to distribute costs among the various services performed for the shippers of that commodity. That is to say, the services of the railroad would consist of handling car load units of a single commodity, and thus its line, terminal, office, and capital expenses, as a whole, might

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be divided among the number of units of service performed. As everyone knows, however, commodities of many varieties and descriptions are carried, and in quantities varying from a few pounds to car loads and train loads. To perform any one of this great variety of services the company's facilities as a whole must be employed. At any given moment of time the company's entire plant is being operated to perform thousands of dissimilar services, and no one can figure out how much of the company's total outlay is to be charged against any one of these infinitely numerous and varied services. In other words, most of the expenditures of a railroad company are, as Prof. F. W. Taussig long since pointed out, "joint costs"; they are paid out for the maintenance of the service as a whole, and can have only indirect connection with any particular act of transportation.

The importance of the fact that a railroad company's expenses are mainly joint costs ought, perhaps, to be emphasized. About three tenths of the railroad company's total expenses are capital costs, taxes, and other fixed charges, and seven tenths are operating and maintenance expenses. Obviously the volume of traffic cannot lessen or increase fixed charges. Operating expenses alone will vary with the tonnage handled and the number of services performed, but, even in the case of outlay for operation, only a part of the expenses is affected by an increase or decrease of traffic. A decline or a gain of ten or twenty per cent in volume of business will have but comparatively little effect upon the outlay for track, structures, terminals, and even for cars and locomotives. While it is true that the railway company's facilities must be developed with reference to the services the railroad has to perform, it is none the less a fact that the larger part of the company's investment must be made to prepare for handling any traffic at all.

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Having established its line and terminals and having provided itself with the equipment for handling some traffic, the additional expense required by a company to put itself in condition to handle much more traffic may be relatively small. Likewise, when a railroad having a large volume of traffic experiences a decline in volume of business, temporarily or permanently, no company is able to decrease its expenses proportionately. Such being the nature of cost in the railway service, it is obvious that rates for particular services cannot bear a close relation to the expenses involved in performing those special services.

The other general reason against endeavoring to base railroad rates upon cost of service and to make each commodity bear its strict proportion of the company's total cost of service is that the adoption of such a basis of charges would at once result in such high rates for cheap and bulky commodities as to make their transportation impossible. This would both seriously limit the tonnage of the railroads and prevent the development of many industries. If coal, iron ore, cement, lumber, grain, salt, and similar commodities were required to pay their proportionate share of both the operating expenses and fixed charges, and silks, shoes, and other articles of high value in proportion to bulk and weight were not required to pay more than their proportion of both operating expenses and fixed charges, the rates on much low-grade traffic would be prohibitively high. Rates are necessarily higher per hundredweight upon articles of high value than upon those of low value. Everybody recognizes the fact that, if it were possible to base rates upon cost of service, like weights of commodities of different values would be obliged to bear dissimilar proportions of the total expenses.

Although the cost of service cannot be accepted as the

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practicable or desirable basis to be considered, to the exclusion of other bases, in determining rates, it is not to be inferred that either the traffic or the operating departments of the railroad can ignore the question of cost. The accounts of railroads are now kept in such detail as to enable the operating department to calculate with approximate accuracy the additional expense incurred in handling a car load or train load of freight; and inasmuch as the greater part of the tonnage of every railroad company consists of car load and train load freight, it is evident that a knowledge of the additional operating expenses incurred by taking on new units of traffic is of great importance both to the operating department, which is concerned with the economical handling of traffic, and to the traffic officials, whose duty it is to establish such rates as will add to the company's net revenues, while at the same time permitting shippers steadily to increase the tonnage offered to the railroad company.

If the rates charged are to add anything to net revenues, the rates must be in excess of the additional operating expenses incident to handling the particular traffic in question. Charges that are lower than these additional operating expenses would cause the company to lose money by performing the service. Such expenses, in other words, fix the minimum limit below which railway rates may not justifiably go unless for temporary and very exceptional reasons. It sometimes happens that a railroad company may wisely haul materials to a mill or factory at a loss while an industry is being established. The manufactures made from these materials may, indeed, furnish the railroad from the start with a traffic from which profits are secured that more than cover the losses due to the low rates on the raw products. If the new industry succeeds, the

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rates on both materials and manufactured output are advanced in accordance with what the traffic will bear.

Although the allocation of the railway expenses among particular services can never be made so accurately as to permit of fixing rates primarily with reference to difference in costs, the progress of cost accounting during recent years has made it possible to measure with increasing accuracy a greater number of the expenses of railway management and to subdivide those outlays more closely among particular classes of commodities and kinds of services; and, with every advance in methods of cost allocation, known differences in costs of service tend to exercise a greater influence upon rate making.

The charge made for transporting any commodity or class of freight varies with the weight of the consignment and the distance it is shipped, for the reason that both weight and distance are factors affecting the cost of service. Expenses, however, do not rise proportionately with an increase in either factor. It costs less per ton or hundredweight to transport goods in train loads than in single car load quantities, and less in car loads than in smaller amounts; likewise, the movement expenses per ton per mile grow less with every increase in the length of haul, and the terminal expenses, which also must be covered by the rate charged, are less per ton per mile when distributed over a long haul. The lower rates per hundred pounds or per ton given to car load shipments than to less than car load lots and the especially low rates on coal, iron ore, and other commodities when hauled in full train loads, are justified by differences in cost of service. For the same reason the charges for long hauls are properly less per ton per mile than are the rates for short distances. The way this works in practice is illustrated by a distance tariff adopted by one

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of the state railway commissions, which made the rate on certain traffic 17 cents per 100 pounds for 25 miles, 20 cents for 50 miles, 24 cents for 100 miles, 40 cents for 200 miles, and 56 cents for 300 miles.

The importance that should be attached to distance in making rates is a much-debated question. While no one advocates charging a flat rate per ton per mile regardless of distance, there are wide differences of opinion as to the extent to which it is proper to deviate from that rule. In the days of unregulated competition the struggle of railways for traffic to and from the large industrial or trade centers caused lower absolute rates to be given for long-distance hauls between those competitive points than were accorded for the shorter hauls to and from the intermediate points where rivalry for traffic was less intense or was non-existent. The practice of charging less for a long haul than for a shorter intermediate one is much less general than it was formerly, but there are numerous survivals of the practice to be found in the southern and western sections of the United States. The Railway Rate Act of 1910 definitely prohibits a greater charge for the shorter intermediate haul, unless permission is given the carrier by the Interstate Commerce Commission. The enforcement of this Act will apparently require a readjustment of many rates in the West and South.

The most striking instance of the disregard of relative distances in rate making is afforded by the transcontinental railway rates. Until recently, most all points east of the Missouri River had the same rates to the Pacific coast, the charges from New York being no higher than from St. Louis; while the rates from the territory east of the Missouri to places some distance short of the Pacific terminals—to Reno, Nev., for instance—were actually higher than

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the through rates to the seaboard. The rates were slightly graded by territorial groups in 1909; and it is probable that the law of 1910 will require the railroads to give more weight than they have formerly given to distance in making transcontinental rates. The railroads have, in the past, felt obliged to make their rates in this way because of the necessity of giving exceptionally low through rates to meet those offered by the steamship lines handling traffic between the Atlantic and Pacific seaboards—formerly around South America, latterly by way of the Isthmuses of Tehuantepec and Panama.

Every railroad, because of the fact that increased tonnage at remunerative rates means lower average costs and higher profits for each ton of its traffic, is under strong pressure to reach out as widely as possible for new traffic and to expand the tonnage of goods handled within the territory which it occupies in common with other railways; and many persons believe it to be a wise policy for the public to permit a railroad to carry any traffic which it can handle at rates that will add to the company's net revenues. Those who hold this view do not believe in prohibiting a lower charge for a long haul than for an intermediate one; on the contrary, they believe it to be for the benefit of the country as well as the carriers to permit every producer to reach the widest possible range of markets that can be opened to him by the railways with which he is served. That this may result in serious discriminations against some localities is not to be denied; but the advocates of the policy of permitting a railroad to make such rates as will enable it to secure maximum tonnage assert that this policy will result in the largest industrial and trade development.

The public, however, does not approve of allowing common carriers so to disregard distance in rate making as to

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establish glaring discriminations among places; it inclines rather to the view that distance should be given such weight in railway rate schedules as to assure each locality its natural advantages of location. Accordingly, there is a "long and short haul clause" not only in the Interstate Commerce Act, but in the laws of most states. Moreover, there are numerous railway companies that have long considered it wise to observe the principle of not charging more for the intermediate short haul than for the longer one; and there is a growing tendency on the part of railroads generally to abandon the former plan of giving the longer haul the lower rate, except where the competition of ocean carriers for especially desirable traffic may make the continuation of the practice seem necessary.

VALUE OF THE SERVICE AND VALUE OF THE COMMODITY AS FACTORS IN RATE MAKING

In following the principle of charging what the traffic will bear, rates are determined mainly by the carrier's estimate of the value of the service to the shipper. If the market price of grain is ten cents a bushel, or 16½ cents a hundred pounds, higher in New York than in Chicago, a grain dealer would probably value the service of transporting corn from Chicago to New York at about fourteen or fifteen cents a hundred. He could pay that rate to the railroad and have enough left for trade profits; and it is reasonable to suppose that the railway company would, unless prevented by competition or government regulation, charge the shipper either the full value of the service, or possibly that amount somewhat discounted for the purpose of stimulating traffic.

The value of the service is, unquestionably, the chief basis of railway charges. The railroads have shared with

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the farmers, miners, lumbermen, manufacturers, and producers of all kinds in the great work of developing and settling our continental country. The railways have been engaged jointly with others in production; and they have constantly sought to adapt transportation rates to the requirements of production and to the trade conditions prevailing in a country where materials are remote from mills and where markets are far from farm and factory. On the whole, it has been fortunate for the people of the United States that the railroads have followed a policy of rate making calculated to bring about the widest development of markets and the greatest possible range of trade. Nevertheless, there are, or may be, certain consequences resulting from charging what the traffic will bear that are not to the general advantage of the public, and which need to be kept clearly in mind both by rate makers and rate regulators.

In spite of the fact that competitive forces go far to prevent railway charges from being high, and actually do keep most rates within the limits of reasonableness, it is still true that competition is not so universal and unrestricted throughout industry and transportation as to protect shippers against being made to bear unjustly high rates. Many articles of light weight and high value can indeed be charged what would be recognized by everybody to be extremely high rates without imposing any serious restrictions upon the expansion of trade. Many writers make much of the fact that an increase of ten per cent in the rates on furniture might possibly add sixteen cents to the cost of a dining room set; that an ordinary suit of clothing might be increased one third or one half cent by the ten per cent advance in transportation charges; and that the cost of shoes might be increased one cent per pair.

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Statements like these, which might be multiplied indefinitely, emphasize the economy of the transportation service; but they also show with equal clearness that if the carrier is not prevented by competition or by government interference, he may exact such rates of producers as would compel them to pay much greater sums to the carrier than it is entitled to receive.

Competition at points served by several railroads is more effective than at places located upon but one line in limiting the charges that may be made on the basis of what the traffic will bear. While local manufacturers and shippers served by only one road will not be charged such high rates as to drive them out of business or to reduce their traffic, or to cause them to move their industry, when it can be done, to some other line or railroad that promises more favorable treatment, it may often happen that a manufacturer may be compelled to meet the burdens of high rates by seeking to enlarge his output by cutting prices. When this occurs, the carrier compels the manufacturer to turn over to the railway company an increasing share of the profits which may more justly belong to the manufacturer. There are few manufacturing plants that can be transferred from one location to another without sacrificing some invested capital, and many producers will prefer to pay high rates rather than to escape such charges by transferring their plants to other localities. In other words, such manufacturers are not secure against unreasonably high charges when rates are based upon what the traffic will bear.

Such being the case, it clearly follows that it is the duty of the makers of rates to adjust their charges somewhat with reference to cost of service as well as with regard to the ability of the shipper to pay; and it is equally clear

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that it is the duty of the government to insist upon this consideration of cost whenever the regulative forces of competition fail to afford society such safeguards against unreasonable rates as ought, in the interest of the general public, to be maintained. The public may rightly insist that there shall be some fair relation between the railway's expenses and its income.

Although the policy of making rates according to what the traffic will bear needs to be held in check more or less by giving consideration, when practicable, to the cost of the service, it is none the less a fact, as Prof. William Z. Ripley has well stated, that the "great dynamic force in railway operation inheres in the value-of-service idea."¹ Professor Ripley illustrates this generalization by an account of the manner in which the transcontinental railways made possible the development of the California raisin industry. Raisins began to be grown in California in 1876, but at that time the American demand was supplied by raisins imported from Spain. The market for raisins in California was so limited that the development of the industry could take place only by giving the California product such low rates to the eastern part of the United States as to permit it to supplant Spanish raisins. In 1876, 70,000 pounds of California raisins were shipped to the East at 1½ cents per 100 pounds, while the rate west-bound on Spanish raisins, of which the shipments amounted to 1,000,000 pounds, was three cents. In this manner the railroads enabled the California growers to secure the entire market in a comparatively short time. In 1891 no Spanish raisins at all were imported, while east-bound shipments from California amounted to 37,600,000 pounds.

¹ *Railroad Age Gazette*, vol. xlv, p. 1313, June 18, 1909.

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The present rates on raisins from California to the East are \$1.10 per 100 pounds in car loads, and \$2.20 for less than car loads.

The beneficent operation of the "dynamic force" of railway charges based upon the value of service should be made impossible neither by the associated action of the railroads nor by injudicious government interference; but the efforts of rival railways to reach new markets may draw them into a warfare that may be harmful to the railroads because of reduction of revenue, and be injurious to the public in consequence of the inevitable discriminations between places and among commodities. The co-operation of the railroads and the limiting authority of the government may at times be necessary to prevent the "dynamic force" from becoming harmful.

The relative values of many articles transported often have much effect upon the rates charged. The plan of varying rates, not, of course, proportionately with, but more or less according to, differences in the values of the articles is not the same as the policy of charging according to the value of the service; although, in general, articles of high value gain more in absolute price as the result of transfer from one place to another than do lower-priced commodities. Articles of high value are charged high rates oftentimes merely because they can stand such a charge, and not because the value of the service to the shipper is noticeably greater than in the case of other articles of equal or lower value.

Articles of much value per weight and bulk practically all come within the freight classification; and it is in classifying such articles that they are made subject to high rates. Valuable commodities are ordinarily put in a higher class than is given those of less worth. The effect of value

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upon classification, and thus upon rates, is, however, not entirely restricted to classified traffic. Goods shipped at commodity rates also have tariffs affected more or less by the relative values of the commodities.

The policy of charging higher rates upon valuable commodities than upon those of less worth is not to be condemned, but rather to be commended. Indeed, American railways might go farther than they now do in making value a basis of charge; and might, without appreciable injury to trade, considerably increase rates on high-priced goods. There could be no valid objection to such a policy from the standpoint of the public welfare. Indeed, it would probably be beneficial to trade and industry as a whole, were the railroads to secure a larger share than they now do of their total revenues from the high-priced goods carried, and a smaller portion of their income from the rates imposed upon the great staples of industry. In a country like the United States, a small reduction in the costs of transporting raw products, foods, and the other basic materials of industry always produces large economic results; whereas the deterrent influence of an increase in rates upon valuable commodities is but slight.

The foregoing discussion of cost of service and value of service as bases of rate making points to the conclusion that neither basis can or might properly be adopted to the exclusion of the other. As Professor Ripley has wisely stated, in the paper above referred to, "Both principles are of equal importance. . . . The tendency to the elevation of cost-of-service to a position of priority . . . is no less erroneous than . . . to insist upon the universal applicability of the principle of charging what the traffic will bear. Neither will stand the test of reasonableness alone. Whether the one or the other should take precedence can

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only be determined by a careful study of the circumstances and conditions in each case; and, in practice, the instances where either principle becomes of binding effect to the entire exclusion of the other are extremely rare."

CAPITALIZATION AND RATES

Whether the rates charged by a railway company are affected by the amount of its capitalization is a warmly debated question. Of course, if a company has sold a large volume of bonds, its fixed charges will be correspondingly heavy; and if it has issued large blocks of stock, the payment of dividends will necessitate large net revenues and profits. A railway, like any other company, will unquestionably seek to secure revenues that will cover operating expenses and fixed charges, and also yield satisfactory profits to the stockholders, and, inasmuch as the railroad must derive its revenues from its rates and fares, the natural assumption must be that the charges will, if possible, be made such as to provide the required revenues, and that if the capitalization is large—if the interest and dividend payments are heavy—the rates must be made high enough to meet the revenue requirements. But the controverted question is, can rates be based upon, or be affected by, capital costs?

Those who hold that railway rates are determined by competition in industry and among the railways and are fixed in accordance with what the traffic will bear—i. e., solely by "commercial conditions"—contend that there can be no connection between capitalization and rates; that the watering of stocks and bonds can only affect the price of the securities and the financial standing of the company; that rates and fares cannot be raised when there is an increase in capitalization and fixed charges. The obvious

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deduction from this is that the general public and the government need not concern themselves about railway capitalization.

There are many persons who are not convinced by this reasoning, and who advance the following arguments to show that capitalization may and does influence the general level of rates:

(1) The claim that rates are fixed solely by commercial conditions, and are not based in part upon capital and other costs of service, assumes the free play of competition and the absence of monopoly—an assumption that does not tally with the plain facts of business life. In so far as competition is eliminated or controlled, to that extent, at least, can the railway traffic official exercise his discretion or assert his will in making rates; and, if the company's fixed charges are heavy or are being made larger, he will be under pressure from his superior executive officers to keep up or to raise the level of rates so that they will bring in the needed revenue. In order to prove that capitalization cannot affect rates, it must be shown that the rate maker can fix rates only at the point which outside forces compel him to select; that there is no "twilight zone" of discretion in rate making created by the monopoly power which is possessed, in some degree at least, by every railroad company.

(2) When a particular rate or a schedule of rates is called in question in proceedings before a government commission or a court, the defendant railway is practically certain to argue that the company's existing rates and fares do not yield more revenue than is required to meet fixed charges and to pay a fair dividend on the stock. In other words, the company's capital costs are held to be a justification for the rates charged; and, if the complainant is able

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to show that much of the capital was issued below par and thus represented water rather than investment, the attorneys for the defendant may be expected to show that, even if the capital was watered when issued, it has now in large part passed out of the ownership of the original purchasers, and has become the property of the general investing public, including, among other holders of the stock, insurance and trust companies, and such "innocent investors" as widows and orphans.

The argument that the present innocent investors in the securities of the company defendant might suffer from the proposed reduction in railway rates, is always, and very justly, effective with the commission or court. It is not right that the present generation should be made to suffer for the sins which the government permitted the previous generation to commit, nor is it just that the investors of to-day should suffer loss because railways were allowed yesterday, last year, or during the preceding decade, to issue as much capital as they choose to put forth, or as they thought the future possible revenues could stand.

The argument that existing rates must be maintained, or that a recent increase in rates and fares must stand in order that the present owners of railway securities may not be deprived of a fair return on the investments which they have innocently made, has often prevented the reduction of railway charges, and thus the connection between capitalization and rates is not merely theoretical but real. While an increase in capitalization is never, and could not be, accompanied by a corresponding raising of rates as a whole or even of particular charges, it is none the less a fact that a large capitalization and heavy fixed charges will tend to keep the general level of rates and fares, year by year, and decade by decade, higher than would be maintained—at

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least under conditions of intelligent and effective government regulation of railways—if the interest and dividend requirements imposed a lighter burden. In this sense, certainly, capitalization may be regarded as one of the bases of railway rates and fares. While capitalization may not greatly affect the competitive rates and fares of a particular road, it does influence noncompetitive rates and thus the general level of charges.

GOVERNMENT REGULATION AND RATE MAKING

Practically all railway rates in the United States are now fixed subject to the limitations imposed by two governments, the State and the Federal. Government regulation is thus a factor in rate making—and is, indeed, a force of increasing influence upon actual railway charges.

Each state regulates railway charges in one or more of the following ways: (1) Maximum rates and fares may be fixed by statute. Such laws regarding freight rates are comparatively few, but numerous states have enacted maximum fare laws. (2) A railroad commission may be established with authority to prescribe a freight classification and a general schedule of class and commodity rates. Several, but not most, states have such laws. (3) A commission may be created with power to revise rates after they have been put into force by the carriers. In some instances the commission may make such revision of charges after an investigation initiated by the commission upon its own motion; in other states, the commission can revise rates only upon complaint of some interested party. (4) In a few states there are commissions which have the power to investigate rates but not to correct them. When such a commission finds any particular rates to be extortionate or otherwise unreasonable, it can only report its findings

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to the Attorney General of the State, who may institute such legal proceedings as he may deem appropriate.

By the Hepburn Act of 1906, the Federal Government endowed the Interstate Commerce Commission with power to revise specific rates after an investigation made upon the complaint of an interested shipper or public body; and by the Mann Act of June 18, 1910, the commission was given authority to revise rates upon its own initiative. The carriers make and alter rates on interstate traffic as they may think wise; and the charges they decide upon become effective thirty days after being filed with the Federal Commission, unless, as the law now provides, the proposed increase in rates is suspended by the commission pending an inquiry into the reasonableness and legality of the proposed action of the railroads.

The upper limit of all railroad charges is fixed by the value of the service to shippers and passengers, by what the traffic will bear. To some extent, government regulation, also, decides what the upper limit shall be. This is the case with all railroad charges in those states that have established statutory maximum rates or fares upon intrastate traffic, or have created commissions with power to prescribe rate schedules. In other states, the railway commission may fix the absolute or maximum rates for particular services. The Federal Commission, under the Hepburn and Mann acts, may name the maxima for rates, which, after investigation, have been found to be unreasonable.

The enlargement of the powers of the Interstate Commerce Commission over railway charges will lessen appreciably corporate control and increase government authority over rates and fares. Whether the policy of giving such powers to public commissions is wise, is a large ques-

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tion upon both sides of which there are sincere and thoughtful men; but, unless there should be a marked change in public opinion as to the desirability of bringing public service corporations under control, rates and fares must in the future, even more than at the present time, be based upon provisions of statutes and the requirements of commission orders.

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CHAPTER XXI

RATE MAKING IN TRUNK LINE AND CENTRAL FREIGHT ASSOCIATION TERRITORIES

Conditions accounting for several rate systems in the United States—

Territory of the "trunk line rate system"—Early competition among the trunk lines—The trunk line rate situation in 1874—The MacGraham percentage tariff, origin and definition—Application to east-bound and west-bound traffic—Limitations and modifications of the percentage tariff system—Rates to and from New England—The "seaboard differentials"—Rates between intermediate points between New York and Chicago—Adjustment of rates between Atlantic and Gulf routes, and among the several Atlantic ports—Local rates within Central Freight Association territory, Trunk Line territory, and New England—The principles underlying the trunk line rate system and their soundness—References.

HAVING described the official machinery by which rates are fixed, and having considered the competitive and theoretical factors affecting them, it now remains to explain in this and succeeding chapters the leading rate systems or structures that have been evolved in different parts of the United States. It will be seen, as the discussion proceeds, that rate making is by no means a simple problem in a country like the United States, so extensive territorially as to include a great range of social and economic conditions. Rate structures, being the outgrowth of these conditions, have so many variations in detail as to make an exhaustive account of them impracticable, even in a volume as large as this; it will be possible, however, to present

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the essential facts regarding the more important rate systems.

The dissimilar traffic conditions prevailing in the eastern, southern, trans-Mississippi, and western sections of the country have brought into existence four leading rate systems, one for each section; while local industrial and transportation requirements have necessitated the adoption of various rate making policies to meet local needs. The vast import and export traffic, moreover, being subject to the competition peculiar to international trade, has required American railways to accord much of its rates different from and more favorable than those given domestic traffic.

In the section north of the Potomac and Ohio rivers and east of the Mississippi, industry is more diversified, and economic competition is keener and more varied than in any other part of the United States. In this region of heaviest traffic, the rivalry of railways with each other and with waterways is still strong, despite the increasing scope and effectiveness of associative action; and the problems of making and maintaining rates still are, as they long have been, especially complicated. This possibly accounts for the fact that the most definite and stable of all rate systems in the United States has been worked out in Trunk Line and Central Freight Association territories. The very necessities of the railroads have compelled them to build up and maintain a rate structure.¹

In the section of country under consideration in this

¹ Much of the information presented in this chapter is taken from Prof. William Z. Ripley's excellent paper upon "The Trunk Line Rate System: A Distance Tariff," *Quarterly Journal of Economics*, vol. xx, pp. 183-210, February, 1906. Professor Ripley's paper contains references to numerous sources of information, the more important of which, together with others, are listed at the end of the chapter

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chapter—New England, and the states north of the Potomac and Ohio rivers, with the exception of Wisconsin and the upper peninsula of Michigan—railway rates are subject to the Official Classification of freight. The section, as a whole, is subdivided into three fairly distinct but closely interrelated traffic territories: (1) New England; (2) the region occupied by “the trunk lines” between the Atlantic seaboard and New England on the east and a line through Buffalo, Erie, Pittsburg, Wheeling, Parkersburg, and Charleston, West Virginia, on the west; and (3) the territory of the Central Freight Association extending west from the line just described to Lake Michigan, and to the Mississippi River from the Wisconsin-Illinois boundary to Cairo. The major part of this chapter is concerned with a discussion of the rates on through traffic between these sections. A brief statement is also made regarding the local rates within each section.

The trunk line railroads are technically those in the district between New England and the Central Freight Association; but, as the trunk line companies now own the railways from the seaboard through to Chicago and St. Louis, it will be permissible as well as convenient for us to apply the term “trunk lines” to the roads connecting the eastern ports from Boston to Baltimore with Chicago and St. Louis.

The situation of uncontrollable interline competition which confronted the railroads in 1869, when the New York Central and Pennsylvania Railroad systems secured Chicago connections, was described in Chapter XV, which gives the history of traffic associations. It was there pointed out that the entry of the Baltimore & Ohio and the Grand Trunk lines into that city in 1874 made the trunk line rate situation little less than chaotic. Had the country

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been enjoying prosperous times in 1874, it might, perhaps, have been possible for the railroads to have established something approaching order in their competition for traffic; but the severe panic of 1873 reduced the traffic and revenues of the contestants to such a low point that competition became destructive warfare.

The principal traffic for which the trunk lines were fighting consisted of east-bound shipments of grain, and this continued to be so until about 1880. This grain was then raised mainly in Ohio, Indiana, Michigan, Illinois, and Wisconsin; and was shipped, for the most part, from the small towns directly through to the eastern seaboard, instead of being brought together in the elevators of the large cities for subsequent transportation to the eastern part of the United States and to Europe. Thus the larger volume of through traffic handled by the trunk lines in the 70's and 80's did not move by well-established routes connecting large cities; it was a scattered business for which there was a general scramble on the part of the railroads competing with each other, and with the carriers moving the traffic by the Great Lakes and the Erie Canal.

Stated more specifically, there were four elements disturbing the trunk line rate situation about 1874:

(1) There was, first of all, the competition between the water route via the Great Lakes and the Canal, and the four trunk line railroads. As against their waterway competitor, the railroads had identical interests, it being to the advantage of each of the four railways to keep as much traffic as possible from reaching the Great Lakes.

(2) As the wheat belt spread westward and the volume of the traffic from the West to Chicago and other ports of Lake Michigan became greater, it was increasingly difficult for the lines eastward from Chicago and Milwaukee to

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hold the traffic against the lakes. Indeed, such grain traffic as the eastern lines secured from their western connections had to be taken at through rates over which the eastern lines had comparatively little control. The lines west of Chicago were fighting among each other for business, and frequently quoted shippers specially low through rates to the East, knowing that the trunk lines could be compelled to accept their percentage of the through rate, whatever it might be. If any trunk lines refused to do this there was the possibility of turning over the traffic to a lake line during the period of navigation, or of giving the business to some rival railroad should the traffic be handled during the time of closed navigation. Under these conditions the weaker or longer trunk line railroads would be sure to make such cuts in rates as were deemed necessary to hold, against their more favorably located competitors, the tonnage obtainable from the western connections. It was the competition of the western lines as well as the rivalry of the trunk lines that made it so difficult for the latter to agree upon competitive rates, or to effect an equitable division of the traffic.

(3) In the 70's and 80's the trunk lines from Chicago to the East had few feeders in the Central Traffic Territory and were obliged to secure a large part of their business from the local cross-line railroads in the states north of the Ohio River. Most of these cross lines had been constructed by local capital for the purpose of building up the trade of cities situated on Lake Erie or on the Ohio River. The local roads were at first quite as much interested in taking traffic to the waterways as in turning it over to the trunk line railroads. There was thus the conflict between the trunk lines and the cross lines instead of the two being worked together, as at the present time, to bring

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about the economical handling of traffic through to eastern termini.

(4) The railroads, in order to hold traffic against the direct route eastward by the Great Lakes and the Erie Canal, and by the roundabout waterway down the Ohio and Mississippi and on by ocean to Europe or the eastern part of the United States, had to vary the rail charges to correspond with the constantly fluctuating rates offered by the water carriers. The effect of this was to disturb the adjustment of the through rates. As Professor Ripley states, "some device for the coördination of the through and local rates—or, as one might put it, for the distribution of the localized shock of water rate changes—was imperatively necessary." The system of rates about to be described accomplished this perfectly.

The efforts made by the trunk line railroads between 1869 and 1876 to deal with the situation thus outlined were unavailing. The failure of the Saratoga conference and of the rate agreements has already been referred to. It was evident that the carriers must all adopt the same general system of rate making and must associate for the purpose of sustaining their rate structures. What was done was to make the rate between New York and Chicago the basis and to make the rates to and from other places—New York-Indianapolis, for instance—a percentage of the base rate.

The credit of devising this percentage tariff system is given to a Pennsylvania Railroad rate clerk by the name of MacGraham, after whom it is called the MacGraham System,¹ and the scheme of rate making is said to have originated in 1876, when it was generally applied on east-bound

¹ See William Z. Ripley, "Railway Problems," p. 314.

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traffic from Chicago and the territory north of the Ohio to the Atlantic seaboard. It is probable, however, that the practice of granting places rates that were percentages of the New York-Chicago rates grew up gradually, and that the percentages were first applied on particular west-bound shipments to certain cities.

Mr. C. C. McCain, the Chairman of the Trunk Line Association, says regarding the origin of the percentage tariff system: ¹

“ Our records appear to indicate that the MacGraham table of percentages for determining west-bound rates was first applied by the Trunk Lines on December 15, 1871. At this time the percentage prescribed for constructing Peoria rates was 112 per cent of the New York-Chicago rate. We find this percentage was applied to articles which were assigned a special rate, such as sugar, coffee, and molasses.

“ While percentages were also at the same time prescribed for constructing the St. Louis rate, it is not clear that these percentages applied generally, as the rates cannot be computed on that basis, but I feel that as far back as 1870 the percentage basis was applied when commodity rates existed to a greater or less degree, the general scheme being varied from to determine particular rates to particular places, such as St. Louis and Cincinnati.

“ We personally know that since 1877 a percentage scale, either the MacGraham table or a revision thereof, was generally applied to west-bound class rates, and also to any commodities which may have been established.”

The MacGraham plan was to make the rate from Chicago to New York the basis. The distance from Chicago to New York by the shortest “ worked or workable ” route

¹ From a letter written, under date of March 25, 1910, by Mr. McCain to Mr. Robert C. Wright.

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was 920 miles; thus the rate to New York from any other place than Chicago was to be determined by the ratio of the distances of that place and of Chicago from New York. For example, the distance from Chicago to New York being 920 miles, a place in Michigan or Ohio 690 miles from New York would always have a rate of seventy-five per cent of the Chicago-New York charge—whatever the base rate might be. Points equally distant from New York would have the same rate. Places in Illinois and southern Indiana more than 920 miles from New York would pay the proper percentage above the Chicago-New York base—the rate for a place 1,035 miles from New York being 112½ per cent of the charge from Chicago.

The MacGraham rate system, as adopted by the carriers generally on their east-bound traffic in 1876, was a simple distance tariff; but it was found desirable after three years to modify the plan to the extent of applying the distance ratio only to the part of the rate that covers the charge for line or movement services, and not to the charges made for terminal services. Every railway rate must remunerate the carriers for the expenses incurred in handling traffic at terminals and in moving it between termini. It is only line costs that are affected by distance, and this fact was recognized in the MacGraham trunk line tariff, as modified in 1879 and now in force. In the revised system the base rate from Chicago to New York was assumed to be twenty-five cents a hundred, and from this assumed rate six cents were deducted to cover the expenses of handling the traffic at the two termini, leaving nineteen cents for the line portion of the charge. Nineteen cents divided by 920 gives the charge per mile 0.0206 cents for *haulage* from Chicago to New York. For a place like Indianapolis, 833 miles from New York, the line charge would

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be 17.2 cents (00.0206 cents \times 833). This amount plus the six cent terminal arbitrary makes an *assumed* rate for Indianapolis of 23.2 cents, which is ninety-three per cent of twenty-five cents, the assumed rate from Chicago to New York. In this manner Indianapolis was accorded a rate of ninety-three per cent of the rate from Chicago to New York, whatever that rate may be; and other places were granted rate percentages calculated by the same method.¹

“For Illustration:

Chicago to New York, per 100 pounds.....	25c.
Less fixed charges, per 100 pounds.....	6c.
	19c.
Basis of rate for computation.....	19c.
Columbus, Ohio, as at present 70 per cent. of Chicago net rate, will be.....	13.3c.
To which add the fixed charges.....	6c.
	19.3c.

And the new percentage from Columbus will hereafter be
77 $\frac{1}{2}$ per cent. of Chicago, in lieu of
70 per cent, as at present.”

For example, Columbus, Ohio, took 77 per cent of the Chicago-New York rate; Cincinnati, 87 per cent; Detroit, 81 $\frac{1}{2}$ per cent; Peoria, 110 per cent, and Cairo, 120 per cent.

¹ The Joint Executive Committee of the Trunk Line and Central Traffic Associations adopted this modified method of determining the rate percentages at a session held on June 12th and 13th, 1879, when the following rules were adopted:

“First: That from all points being less distant from New York than Chicago new percentages be adopted for making up rates on east-bound freight upon the following basis: the percentages from points of the same, or no greater distance than Chicago, to continue as heretofore.

“Second: That six cents per 100 pounds be first deducted from an assumed rate of 25 cents per 100 pounds, Chicago to New York, said

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This percentage distance tariff system was first applied generally to east-bound shipments, apparently because west-bound tonnage was relatively small, and the rates were lower than those on east-bound business—but the system worked so well that it was adopted the following year (1877) on traffic toward the West. The west-bound percentages, however, were in many instances different from those east-bound; but the number of variations was reduced after the enactment of the Interstate Commerce Law in 1887. At the present time the percentages are practically the same each way.

In order to understand correctly the tariff system, just described, it is necessary to keep in mind several important limitations and modifications. The scheme of rate making was by no means so simple as the above general description would imply.

The tariff system was limited to rates from those points where there were two or more competing railway lines. When first worked out as a general scheme, the rates were based upon "a table of percentages for computing rates from western competing points to New York," and later, as has already been stated, the same system of rate making was applied to all west-bound traffic from eastern compet-

deduction to represent the fixed charges at both ends of long or short hauls.

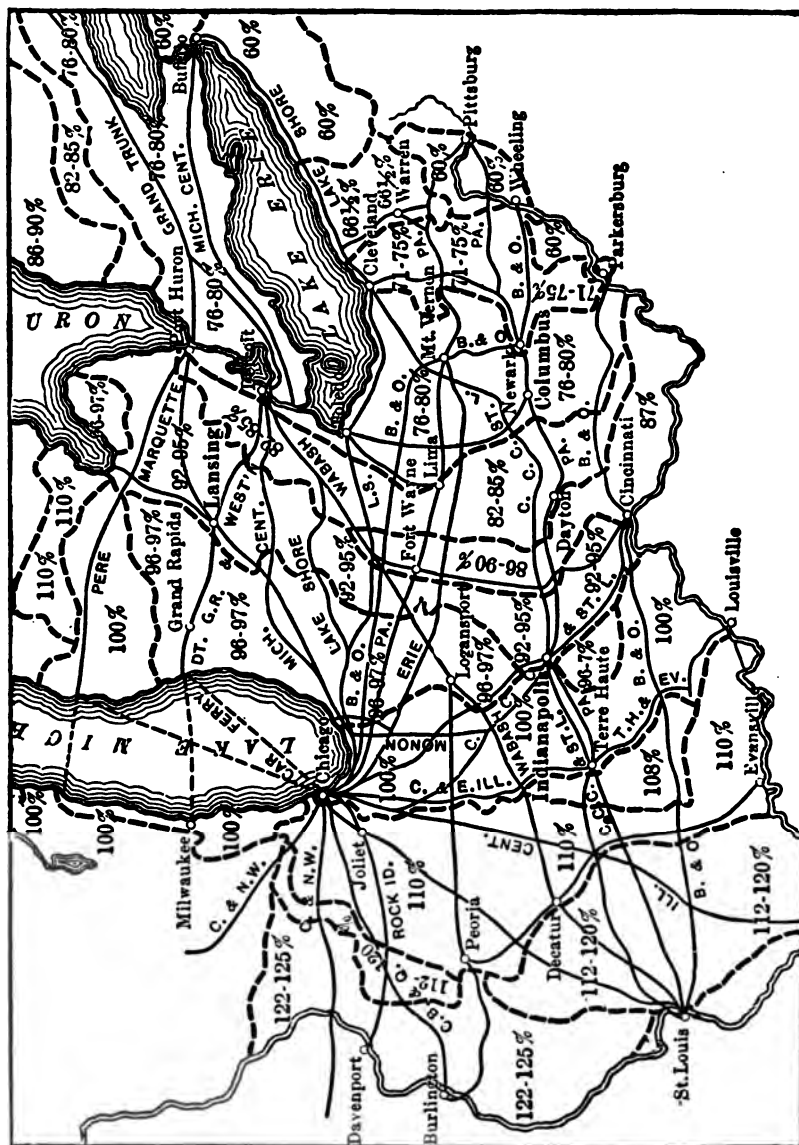
"Third: That, after such deduction, the rate per mile, which the remainder, or 19 cents per 100 pounds, produces from Chicago to New York, shall be charged per mile from all common points named in the first section, according to the percentages of distance shown by the table adopted at Chicago, April 13, 1876, to which result so computed the six cents per 100 pounds of fixed charges first above deducted shall be again added, and the percentage of the Chicago rate of 25 cents, produced by such additions, shall thereafter constitute the percentage of the Chicago rate, which shall be subsequently charged from the points named in first section."

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ing points to places in the West, between Pittsburg and the Mississippi River. Shipments from local stations paid a rate equal to the sum of an "arbitrary" from the local station to the nearest common point plus the percentage rate from that point to destination; the arbitrary might be equal to or less than the local rate to the common point, but could not exceed that charge. After the enactment of the Interstate Commerce Act, the rates from both local and common points were so adjusted as to obviate all violations of the long-and-short-haul clause.

Another limiting fact regarding the rate system was that the percentages applicable from the various competing points established "the minimum basis for computing rates from the points named." Any carriers might make their rates "upon a higher basis from any point by agreement with the initial line interested." Many tariffs name the percentages upon which the rates are computed. The system was approved by the Interstate Commerce Commission in 1904.

The percentage tariff system, strictly applied, would give every competing point its exact percentage of the Chicago-New York rate, and thus a graphic representation of the rates in the region between Pittsburg and the Mississippi River would show a succession of narrow concentric rate zones—the rates increasing from sixty per cent of the Chicago-New York rates at Pittsburg to 122 per cent along the Mississippi above St. Louis; but, as the accompanying outline map shows, the railways have found it necessary to make numerous modifications of the mathematically exact percentages in adjusting the rates to business conditions. This distance tariff took the place of rates made with little regard to length of haul; and, of course, strong pressure was put upon the trunk line railroads by the cross



MAP 1.—SHOWING RATE PERCENTAGES IN CENTRAL TRAFFIC ASSOCIATION TERRITORY ON EAST-BOUND TRAFFIC.
The map states the percentage of the Chicago-New York rate applying in each section.

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line railways, by shippers, and by cities to secure favoring exceptions from the distance percentages. On the whole, it is surprising that the percentage or distance system of rates was maintained by the carriers with as few modifications as were made. Indeed, the rate structure would probably have been overthrown had not the carriers been so wise as to insist rigidly upon observing the principle of not charging more for a short than for a long haul. In all modifications and adjustments of the percentages, the long-and-short-haul principle—that of making distance the controlling factor—has been generally adhered to.

Deviations from the exact percentages have been due mainly to three causes: (1) Interrailway competition at junction points; (2) the necessity of keeping each north and south cross-line railway as nearly as possible within one rate zone; (3) the trade rivalries of the large centers of production in the central West.

The condensed map of the rate percentages shows the percentage zones to be broadly concentric with reference to New York as a center, but to be of uneven width and to have surprisingly irregular boundaries. It is impossible, on a small map, to show all the percentage zones—to indicate the rate percentage basis to every place—and it has been necessary to include in some of the subdivisions of the map the places having rate percentages within a designated range, as, for instance, 71–75 per cent. In four of the indicated zones—the 60, 66½, 100, and 110 per cent zones—the percentage given applies throughout the zone.

The influence of interrailway competition at the chief traffic centers upon the boundaries of the percentage zones is clearly discernible. It will be seen that the zone boundaries are so located as usually to run just west of the large

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cities and chief centers of railway competition, such, for instance, as Cleveland, Detroit, Cincinnati, Fort Wayne, Indianapolis, Peoria, etc. In the case of nearly every place where there is strong competition the western boundary of a rate zone has been deflected westward so as to give the competitive center the lower rate prevailing throughout the zone lying to the east. A notable instance is afforded by Newark, Ohio, where the Pennsylvania and Baltimore & Ohio cross. Another illustration of this is shown by Indianapolis, which comes within the 92-95 per cent zone, the western boundary of which curves well to the west in order to include that city. It will be noted that the 92-95 per cent zone is carried across the 96-97 per cent zone which is thus divided into two parts.

The effect of the centers of exceptional competition in depressing the rates is offset by extending the rate zones *eastward* in districts where there is slight competition. This is well illustrated by the width of the zones along the Ohio River, where the interrailway competition is less intense than it is farther north. The eighty-seven per cent zone extends from Cincinnati almost to Parkersburg; while Louisville gets as low a rate as places a short distance west of Cincinnati.

The second modifying influence upon the boundaries of the percentage zones is the necessity of keeping each cross-line railroad either within one or within as few zones as possible. As the map indicates, the zone boundaries in several cases run parallel with and just west of an important north and south railroad. The western boundary of the 110 per cent zone parallels the Peoria, Decatur, and Evansville; in the 100 per cent zone the western margin is close to the Illinois Central for a short distance out of Chicago, then runs close to the Chicago and eastern Illinois

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to Terre Haute and farther south along the Terre Haute and Evansville. Other instances might be cited.

A cross line must, as far as possible, be kept within one zone in order that it may prorate through traffic under like terms at its points of junction with the east and west trunk lines. A north and south line must be in position, as Professor Ripley states, to take traffic "coming in from the East at the north and worked south, or coming in from the East at the south and worked north." The reason why the 100 per cent zone was carried east to Indianapolis was to bring the Monon within a common rate zone, and make it possible for that road to "work its line profitably in both directions."

The other force requiring the railroads to modify rate percentages—competition of rival centers of production—has operated constantly; and has, from time to time, brought about minor changes in the percentages allotted to various cities. Until recently, for instance, on east-bound traffic Evansville, Ind., was in the 110 per cent zone, and Vincennes in the 108 per cent belt; but at the present time Evansville has 105 per cent and Vincennes 103 per cent. Grand Rapids, Mich., has succeeded in bringing her percentage down from 100 to 96; at different times Detroit has been given 81½, 75½, and 78 per cent. The change in percentages has not always been downward, although the modifications are usually in that direction. The industrial development of the central West necessitates these modifications in percentages in order to keep the rates adjusted in accordance with changing economic conditions. Experience has shown, however, that the necessary alterations in percentages have been relatively slight.

The adjustment of rates on traffic east and west bound between New England and the central West is such as to

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promote New England's manufacturing activity as much as possible. The rate from any particular point in Central Freight Association territory is generally the same to any part of New England, and is a fixed differential—from seven to two cents a hundred pounds, according to the class of freight—above the charge to New York. All places in New England can secure goods and the materials of industry under equal conditions, as far as rail rates are concerned. On traffic outbound from New England to Cleveland and points west thereof the rate is not only the same from all parts of New England, but also the same as from New York; New England is "blanketed" by a common rate which is that of New York.

In discussing freight traffic associations an account has been given of the struggle of Boston, New York, Philadelphia, and Baltimore over the question of differential rates on traffic to and from the West. This conflict began as soon as the trunk lines commenced to bid against each other for traffic at Chicago; and the competition was waged most fiercely for control of traffic which has always been moved at commodity rates. The Grand Trunk was interested in Montreal directly and Boston indirectly, the New York Central and Erie in New York, the Pennsylvania Railroad in Philadelphia, and the Baltimore & Ohio in Baltimore. It was evident that the MacGraham distance tariff would help the New York Central and to a less extent the Pennsylvania Railroad to hold tonnage against lake competition. The Baltimore & Ohio line, however, was located so far from the lakes, through most of its route, as to be less affected by the competition of the water carriers. What the Baltimore & Ohio especially wished was a rate to and from Baltimore appreciably lower than that prevailing to and from New York. The Pennsylvania Railroad desired

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to secure for Philadelphia a substantial differential under New York. Out of this situation were evolved at the same time both the seaboard differentials and the distance tariff system.

The adjustment of differentials agreed upon in 1879 was as follows: "To Boston and to points taking Boston rates add 5 cents to the rates to New York; to Philadelphia and points taking Philadelphia rates deduct 2 cents per hundred pounds from the rates to New York; and to Baltimore and points taking Baltimore rates deduct 3 cents per hundred pounds from the rates to New York." These were fixed differentials, the same for all classes and commodities. On *export* traffic Boston had the same rates as New York.

Since the last adjustment of the east-bound seaboard differentials by the Interstate Commerce Commission the rates have been as follows:¹

"Rates on freight articles from the West to Baltimore, Philadelphia, and Boston are adjusted according to the following differentials above or below New York: Domestic traffic, 3 cents less to Baltimore and 2 cents less to Philadelphia; 7 cents, first class, to 2 cents, sixth class, more to Boston. Export traffic, same as domestic traffic to Baltimore and Philadelphia, except on grain and iron and steel articles, which is $1\frac{1}{2}$ cents less to Baltimore and 1 cent less to Philadelphia; same rates to Boston as New York on this traffic." On flour Philadelphia has 1 cent and Baltimore 2 cents under New York; and on ex-lake grain from Buffalo and Erie, Philadelphia and Baltimore have a common differential of $\frac{1}{10}$ of a cent per bushel on wheat, rye and

¹ Report and Opinion of the Interstate Commerce Commission in the Matter of Differential Freight Rates to and from North Atlantic Ports. Decided April 27, 1905. XI I. C. C. Reps. (1906), 13-81.

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corn, and $\frac{1}{10}$ of a cent per bushel on barley and oats under New York.

On west-bound traffic there has been no distinction between imports and goods of domestic origin in the differentials from the seaboard cities other than Boston. Prior to 1909 for more than thirty years Boston had had the same rates as New York to Chicago and the central West; and for some time the Philadelphia differentials under New York on the several classes had been 6, 6, 2, 2, 2, 2 cents per hundred pounds and those for Baltimore 8, 8, 3, 3, 3, 3 cents. On the 1st of January, 1909, the lines from Boston lowered their west-bound rates to the Baltimore basis, whereupon there ensued a serious controversy among the trunk lines and among the commercial organizations of Boston, New York, Philadelphia, and Baltimore. On May 10, 1910, the Interstate Commerce Commission, upon request of interested parties, made a temporary rule, pending investigation, that the import rates should be the same from Boston, Baltimore, and Philadelphia. See Chapter XXV, page 499.

When goods are shipped west from the eastern seaboard cities by a combined ocean-and-rail route or by an all-rail Canadian route, the rates are less than by the direct all-rail lines by differentials, which vary with the different routes, being greatest for the most circuitous lines. The higher classes of freight naturally have larger differentials than the lower classes.

Thus far the discussion has related to rates on rail traffic moved in both directions between points in the central West and New York and other Atlantic seaboard cities. The percentage system, however, applied to traffic, both east-bound and west-bound, between any competing point in the central West and any competing point in the territory

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east of Buffalo and Pittsburg. The rate from Columbus, Ohio, to Albany, N. Y., for example, was determined by multiplying the Columbus-New York percentage (77) of the Chicago-New York basis by the ratio of the Columbus-Albany distance to the Columbus-New York distance. The rate from Columbus to Albany was 96 per cent of the Columbus-New York rate; from Columbus to Syracuse, 76 per cent; and to Utica, 87 per cent of the rate from Columbus to New York.

The rate percentages for traffic between places intermediate between Chicago and New York apply to relatively wide districts instead of being different for each place or for small sections. For example, all points in the central West from which the rates to New York are 72 to 78 per cent of the Chicago-New York charge have an identical percentage to Albany and Albany common points.

The rates to the North Atlantic seaports on export traffic from St. Louis, from other more northerly Mississippi River crossings and from the region west of the Mississippi are affected by the competition of the railroads to the Gulf with those running east and west. This is also true, to some extent, as regards commodities of domestic consumption when handled in bulk. Formerly it was the steamboats on the Ohio, Mississippi, and Missouri rivers with which the railroads to the Atlantic had to reckon; but now the problem is to harmonize the rival interests of the railroad lines leading east and south from St. Louis and points to the North and West.

Still more difficult rate problems are met with in adjusting the relative charges by way of the many east and west lines or routes over which traffic may move. There are, first, the all-water routes by the Great Lakes and the St. Lawrence and the lakes and the Erie Canal; second, the

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all-rail lines, of which there are two classes—the more direct or “ standard ” lines and the longer or “ differential ” roads; third, the lake-and-rail lines, both “ standard ” and “ differential ”; and, fourth, there are the ocean-and-rail routes taken by traffic starting from Boston, New York, or Philadelphia by sea for Baltimore, Newport News, and Norfolk for transshipment by rail. Goods are also sent from New York to New London by water and then taken west via Canada, either by rail to destination or by rail to Depot Harbor, on Georgian Bay, and thence by the lakes. Over these various routes and their numerous variants, traffic is regularly handled by aggressive fast freight lines at rates that have been adjusted to meet the conditions of competition.

The rates in cents on classified traffic from New York to Chicago by way of the lakes are as follows:

	1	2	3	4	5	6
Standard Rail and Lake.....	62	54	41	30	25	21
Differential Rail and Lake.....	52	46	35	26	22	19
Canal and Lake.....	42	38	29	22	19	17

The rate on first-class traffic from New York to Chicago by a standard rail line is 75 cents; by differential rail, 69 cents; and by ocean and rail, 65 cents. The rates on flour from Chicago to New York are 2 cents less by lake-and-rail than by all-rail lines, while the charge on sugar from New York to Chicago is three cents higher all rail than via rail and lake.

Mr. Walter Thayer, Assistant General Freight Agent of the Pennsylvania Railroad Company, illustrated the adjust-

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ment of rates among the various east and west routes, in 1908, by stating that "during the season of open navigation a shipper in New York who wishes to forward a hundred-pound case of blankets (first-class goods) to Chicago has, among others, a choice of the following routes, in connection with each of which the charge would be, in cents, the amount mentioned: Standard all rail, 75 cents; differential rail, 69 cents; ocean and rail, 65 cents; standard lake, 62 cents; differential lake, 52 cents; and canal and lake, 42 cents."¹

Thus far the rates considered have been those on the traffic moved, east- and west-bound, between the central West and the eastern seaboard states. It remains to speak briefly of railway charges on freight handled within the Central Freight Association territory, within the section served by the Eastern trunk lines, and within New England. The percentage tariff system applies only to the through business between the East and West, and not to the shipments from one point to another within one section. Local rates are, for the most part, distance tariffs, although the charges do not vary strictly in accordance with distance. Competitive conditions cause certain places, notably New York, to receive lower rates per ton per mile than are given other points. This is especially true of such commodities as cement, coal, and heavy iron. The long-and-short-haul principle, however, is generally adhered to.

In the territory of the Central Freight Association distance tariffs generally prevail for hauls up to about seventy-five miles in length, with a decreasing rate per ton per mile for longer distances. Each railroad company works out its own rates, harmony of action being secured through

¹ "Transportation on the Great Lakes." *Annals of American Academy of Political and Social Science*, vol. xxxi, p. 135, Jan., 1908.

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the Central Freight Association, of which all the railways are members. Certain rates made by the individual members are compiled by the association and filed with the Interstate Commerce Commission as the Central Freight Association tariff. This is a tariff of minimum, not of absolute rates, and names the scale of charges below which rates will not be reduced by any individual company. Actual charges often rise above the minima named in the tariff.

No account need be given of the schedules of maximum rates made long since by the Legislature of Ohio or the Railway Commission of Illinois. The railroad companies have to fix their charges in conformity with the tariffs promulgated by the states, but the actual rates usually range below the government requirements, and are thus not greatly affected by state action.

Local rates within the Central Freight Association territory are in many instances influenced by the percentage tariffs applying on through traffic between the central West and the East. For instance, the rates from Chicago to Toledo (234 miles), to Detroit (272 miles), and to Port Huron (325 miles), are the same, because Toledo, Detroit, and Port Huron have the same percentage of the Chicago-New York rate.

The rates within the trunk line territory, between the Buffalo-Erie-Pittsburg-Wheeling line and New England, are distance tariffs, modified in many ways to meet the requirements of competition. The adjustments necessary to maintain harmony among the numerous lines are made mainly through the medium of the Trunk Line Association and the Middle States Freight Association, the latter organization being especially concerned with the local traffic within the Middle States and from that section to New England.

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Within New England, likewise, local distance tariffs prevail; and the long-and-short-haul rule is observed, with the exception of a few points along the coast where the railways have to meet the competition of the coastwise steamship lines. The railroads are obliged to meet the especially low rates by water between Boston and Portland, for instance; but the rail rates from Boston to a place a short distance south of Portland are higher than the through charges. However, the effect of water competition upon rail rates in New England is not widely influential, as is the case in the Southern States, whose rate structure is explained in the following chapter.

The details regarding rate making in the northeastern part of the United States have been omitted from this discussion with the hope of making clear the controlling principles. In no other section of the country is the rate system so complicated; but one may say with equal certainty that this traffic territory has a better-adjusted railway rate system than has any other large division of the United States.

As the result of his study of "the trunk line rate system" Prof. William Z. Ripley states that "three principles in particular deserve mention in this connection. These are: (1) that the element of distance should be a prime factor in the final adjustment of rates as between competing localities; (2) that coöperation and agreement between competing carriers are essential to any comprehensively fair system; and (3) that permanency and stability of rates are of equal importance with elasticity."

The soundness of these three conclusions can hardly be questioned. The necessity for coöperation in rate making and the desirability of stability are beyond dispute. In general, distance must be the prime factor in fixing rates;

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and it is an interesting fact that the greatest weight has been given distance in constructing the rate system prevailing in the section of the United States where traffic is densest, where the railway lines have been most completely developed, and where transportation conditions are most satisfactory.

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5. Albert Fink, "Adjustment of Railroad Transportation Rates to the Seaboard," 1882.
6. L. G. McPherson, "Railroad Freight Rates," pp. 67-78, New York, 1909.
7. Walter Thayer, "Transportation on the Great Lakes," in *Annals, American Academy of Political and Social Science*, vol. xxxi, pp. 126-138, January, 1908.
8. The original and best sources of information concerning existing rates are the printed "tariffs" of the railway companies, which can usually be secured upon application.

CHAPTER XXII

RATES IN SOUTHERN TERRITORY AND TEXAS

The traffic territory of the South and Texas—Railroad rates controlled largely by waterway competition—Other competitive influences—The basing point system of rate making—Coastwise competition and rail rates to and from the South—Atlanta common points—The Baltimore-Atlanta base rate—Rates to and from the South via Ohio and Mississippi River crossings—"The Virginia Cities" tariffs—The Mississippi River and railway rates—Rate making in Texas—Traffic conditions—Graded and maximum rates—"Common point" territory—References.

THE southeastern section of the United States east of the Mississippi River and south of the Ohio and Potomac is a traffic territory as distinct as that comprising New England and the states westward to the Mississippi. Throughout the southeastern district, with minor exceptions, the Southern Classification prevails; while the nature of the railway traffic and the competitive conditions under which it is handled have also brought about the adoption of rate systems peculiar to that section of the country. The rate policies in this region are well defined and are the result of definite economic forces.

The State of Texas is so large as almost to form a traffic region by itself. It is commercially associated with both the Southwest and the Southeast. From the north, railways in increasing number are bringing south supplies and manufactures for sale in the state and are hauling across

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the state a swelling volume of grain, cotton, and other products for export from Galveston and other ports. The railway tonnage north-bound from the seaboard and interior cities of Texas does not equal the traffic south-bound, but is steadily rising. However, in spite of the increasing trade relations of Texas with the Southwest, the state still faces the Gulf. Its staple productions are mainly shipped through the Gulf gateways, and its trade with the manufacturing northeastern part of the United States is handled chiefly by the coastwise steamship lines, whose rates set the limits of railway charges and determine the general policy of rate making followed by the railroads. The dominant industries of Texas are similar to those of the other Gulf states; and thus, for industrial as well as transportation reasons, it seems logical to include a discussion of railway rates in Texas in this chapter on rate making in the southern part of the United States.

Railway charges to and from the southeastern states bear the imprint of the rates of the steamship lines plying between North Atlantic and South Atlantic and Gulf ports. On traffic between ports the rail lines seldom find it practicable to meet the all-water rates, the charges of rail carriers between such points being generally a fixed line of differentials above the all-water rates. These differentials on the several classes of traffic represent charges which shippers or consignees are willing to pay in excess of the all-water rates in return for more rapid transportation, fewer transfers, and other advantages of continuous transportation. Water competition also controls the all-rail rates between the northeastern part of the United States and interior points within the South, such as Atlanta, Chattanooga, Montgomery, and Dallas, because the all-rail charges cannot exceed, or cannot be much above, the through rates

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over a combined water-and-rail route. Much of the traffic into and out of the South is handled by the coastwise steamship lines and the railroads connecting the seaboard gateways with the interior markets and manufacturing centers of the "Southland."

Moreover, as will be shown presently, the influence of coastwise water competition upon railway rates is not confined to the traffic between the sections north and south of the Potomac. There is a large and growing volume of tonnage carried between the states north of the Ohio River and the entire southeastern section, consisting of manufactures and food products from the North and of cotton, lumber, and other staples from the South. Thus the upper Mississippi Valley competes with the middle Atlantic and New England states for the trade of the South; and it is obvious that the railway rates between the South and these two competing districts in the North cannot be widely divergent, although they need not be, and are not, entirely equal. In general, however, the coastwise steamship lines, by controlling the rates of the railways parallel to the Atlantic coast, indirectly set the limits of charges upon the railroads that cross the Ohio River.

In former days the steamboats on the Ohio and Mississippi and their principal tributaries were potent factors in the establishment of railway rates. These streams are still factors, the character of vessels, the deepening of channels, etc., having kept pace with the advance of commerce; but by reason of the demand in connection with the majority of traffic for more expeditious transportation than can be obtained from even the improved river steamers and deepened channels they are not so important as formerly. The present interest in, and agitation of, the question of improved waterways indicates that a larger use of water routes may

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hereafter be expected. The rates on coal to points along the Ohio and lower Mississippi are fixed by the river barges; the navigability of the Cumberland River has some, though not very great, effect upon the railway rates between Nashville and Ohio River points; while in the lower Mississippi Valley from Cairo to New Orleans the charges on the railways near the river are noticeably regulated by the Mississippi. The influence of the Mississippi, little used as it is at the present time, is not confined to railways leading to New Orleans, but must be reckoned with to some extent by a road like the Mobile & Ohio, especially interested in the success of Mobile, a commercial rival of New Orleans.

The rate systems in the South have been subject not only to the general competitive factors just mentioned, but also to the rivalries of interior trade centers and of the ambitious ports along the Gulf and the South Atlantic seaboards, each striving to secure as great a share as possible of the total commerce of the South. In a similar manner each of the Ohio River cities from Cincinnati to Cairo has sought to be the chief doorway to and from the South. We shall see that railway rates have been worked out with a view to adjusting equitably these competitive conditions.

Enough has been said to indicate that rate making in the South has been a complicated problem. In order to describe clearly the rate systems that have been built up it will be necessary to restrict the account to the main features of the structures and to avoid confusing detail. It will be best to begin with the rates to and from the interior trade centers of the South, and in order to understand how such rates are made it is necessary to know what is meant by the "basing point system."

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THE BASING POINT SYSTEM OF RATE MAKING

Before the South was supplied with a net of railways the rivers were the main highways of heavy traffic between the interior and the seaboard, and the chief centers of trade were the seaports and the interior cities located on navigable streams. The first railways constructed, naturally, connected the ports with the inland markets, at which an active competition immediately ensued between rail and water routes. As the railway lines multiplied, each seaport and most of the interior cities came to be foci of radiating railroads; and thus to the competition of rail and water carriers was added interrailway rivalry.

The struggle for traffic at competing points, first between railway and waterway and later among rival railroads, led to the establishment of lower rates at the larger traffic centers, where competition was strong, than were charged at noncompetitive points, even though the local point at which the higher rates prevailed might be on the way to the competitive center enjoying the lower charge. Obviously the charge at the local intermediate station could not exceed the sum of the through rate to the competing point plus the local rate from that place back to the intermediate point. It was possible, and it became the practice, for the several railroads serving an important common trade center to charge all local points in the district about the center rates equal to the sum of the through rate to the competing point and the local rate into or out of the city where there was competition.

The following concise explanation of the origin and continuance of the "basing point" adjustment of rates has been made by Vice President J. M. Culp, of the South-

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ern Railway Company, in an address delivered at Harvard University in 1909:

“ As a result of the conditions which existed prior to the building of the railways and of subsequent developments, there are several classes of basing points in the South. First, there are the seaports from Norfolk to New Orleans. Through these ports the products of the interior Southeast were shipped, and from them the products of other countries and of the northeastern states were distributed to the interior South. Then came the development of distributing centers along the Ohio and Mississippi from Cincinnati to New Orleans, and of a secondary series of distributing points at the head of navigation, or at the fall line of the principal rivers flowing into the Atlantic and the Gulf. As examples of these interior trade centers at the head of navigation, I may mention Richmond, Va.; Columbia, S. C.; Augusta, Macon, Columbus, Ga.; and Montgomery, Ala., all of which and others were in existence before the building of the railways, and were points at which the products of the surrounding territory were collected and from which goods were distributed by wagon or pack animals. When the railways were built they found these trade centers already in existence, and they simply accepted the situation as they found it, and adjusted their business to existing and controlling trade conditions. Still another class of trade centers or basing points grew up with the development of the railway system. These were at gateways such as Atlanta, and at strategic railway centers such as Birmingham, where intensive railway competition without water transportation had the effect of creating distributing points. When the roads were first built there were few, if any, towns of any importance on their lines except these trade centers that had already become established. The only practicable

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means of distribution was to ship to these centers as distributing points.

"As other towns at railway junctions have grown in commercial importance, there has been brought about, in some cases, a readjustment of their rates to a level between those of the purely local points and those of the more highly competitive points; in fact, in a few instances the readjustment has been on the basis of highly competitive adjacent points.

"Economic conditions in the South aided in the perpetuation of this system. It was essentially an agricultural region, practically without industrial centers, and consequently without a large percentage of urban population. The system by which planters bought their supplies in bulk to be issued to their labor, and the practice which early grew up of merchants giving credit to planters until their crops were marketed, also tended to concentrate trade in the hands of dealers at the larger and financially stronger centers."

In most instances the traffic of the local stations within the district about the competitive, or "basing," point was handled through the basing point, although, as just indicated, that was not done when the local town was intermediate on the line to or from the basing point; in which case the intermediate station was charged a higher rate than the basing point for a shorter haul. The Interstate Commerce Commission sought to prevent this method of making rates as a violation of section 4, the "long-and-short-haul" section of the Interstate Commerce Act, but the United States Supreme Court overruled the commission and held that the active competition of the railways at one point and the absence of the same at another place created conditions that were not "substantially similar" and that might justify a lower charge at the competing center. The Mann Act of June 18,

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1910, eliminates from the fourth section the phrase "under substantially similar circumstances" and otherwise strengthens the law. Railways must now observe the long-and-short-haul principle unless permission is secured from the Interstate Commerce Commission to charge more for a shorter haul.

Should the commission insist upon a strict observance of the long-and-short-haul principle it will be necessary for the railways in the South to make the rates to and from the intermediate towns no higher than the more distant basing points. This will require a modification of the present basing point system of rate making, but it is difficult to anticipate whether the basing point rates will be advanced or those to intermediate points reduced.

The first cities made basing points were those at which the railways had to meet the competition of coastwise or river steamers; then the important railway centers in the South were made basing points—Atlanta, the most influential of all basing points, having no navigable waterway. In a few instances a town served by only one railroad and by no waterway is treated as a basing point in order to enable it to share in the trade of its surrounding district in competition with some other neighboring city which, because of railway rivalry, has been made a basing point.

The basing-point system of rate making applies mainly to the external trade of the South—i. e., to the traffic inbound and outbound between the chief market and manufacturing centers of the South and similar centers in other parts of the United States and in foreign countries. Moreover, as will presently appear, the rates on railway traffic into, out of, and through the South are made to conform to other requirements than those imposed by the enforcement of the basing-point principle.

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Local rates within the South, applicable between points where there is no competition and where there are no special rates resulting from competitive or other peculiar conditions, are tariffs based primarily on distance. They are, with respect to state traffic, scales which have been fixed by, or have the approval of, the several state railroad commissions. Where applicable to interstate traffic they are generally the result of varying conditions including the local scales of the several states through which they are applicable.

COASTWISE COMPETITION AND RAIL RATES

Railway rates on most of the traffic into and out of the southeastern and southern part of the United States from the James River to the Rio Grande are directly or indirectly regulated by the coastwise steamship lines and sailing vessels. These steamship lines maintain frequent services connecting (1) the eastern seaboard cities from Boston to Baltimore with Norfolk—the northeast portal of the South; (2) the seaports from Boston to Norfolk with the Atlantic ports of the South from Wilmington, N. C., to Jacksonville, Fla.; and (3) the North Atlantic ports from Boston to Norfolk with the Gulf ports from Galveston to Pensacola. The line steamers handle the package freight and much of the heavy commodities; but a large share of the lumber and other bulk traffic is handled in sailing vessels and in steamers not run as line vessels.

Most of the traffic handled between the seaports of the North Atlantic and those of the Gulf and of the Atlantic south of Virginia is moved coastwise at rates lower than the railways could profitably maintain. From the North Atlantic ports, Philadelphia to Boston, the rates to Norfolk are the same by rail and by water, while to points farther

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south on the Atlantic and Gulf the all-rail charges are somewhat higher than the all-water rates. Ordinarily the railway can and does charge a higher rate than a competing waterway. One important reason why this is possible is that the terminal facilities of the railways allow the carrier to place cars alongside factories, mills, or warehouses in many parts of a city, while the vessel which contains the equivalent of many car loads of freight must be loaded and unloaded at one place—its pier or wharf. For the majority of shippers and consignees in large cities the costs for drayage or cartage are greater when goods are transported by vessel than when carried by rail.

Railways make such low rates between the North Atlantic seaboard cities and the southern ports that it is often necessary to charge higher rates for shorter distances to inland towns intermediate between the terminal seaports. For instance, the rates from Washington, D. C., to Mobile are lower than those to Charlotte, N. C., less than half the distance. The all-rail rate on freight of the first class from New York to Brunswick, Ga., is 87 cents, the coastwise water rate being 57 cents, while the corresponding all-rail rate to Columbia and Augusta is \$1.08.

The all-rail rates between the northern ports and interior places in the South like Charlotte, Columbia, Atlanta, Birmingham, Chattanooga, and even Knoxville, are fixed with reference to the through rates, inbound and outbound, over a water-and-rail route via Norfolk, Wilmington, N. C.; Charleston, Savannah, Brunswick, Jacksonville, or some Gulf port, the most important Atlantic gateways south of Norfolk being Charleston and Savannah, each of which is served by several steamship lines. The all-rail rates are the same as the rail-and-water rates between the North Atlantic seaboard and Knoxville, Chattanooga, and

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Meridian. Birmingham, Selma, and places east of a line drawn through Chattanooga, Montgomery, and Pensacola have all-rail charges higher by fixed differentials than those by water and rail. The all-rail rates on class traffic to Atlanta, the most influential interior traffic center in the South, from the North Atlantic ports, Boston to Baltimore, inclusive, exceed the sea-and-rail rates by the following fixed differentials:

Class	1	2	3	4	5	6
Differentials (cents)	12	10	9	8	6	5

The rail-and-water rate on first-class freight from New York to Atlanta, and other points taking the Atlanta rate, is \$1.05 per hundred pounds, and to Montgomery, Ala., \$1.08. The all-rail rate to Atlanta and points taking the same rate is \$1.17 on first-class traffic.

In prorating the through rate between the rail and steam lines "constructive" instead of actual mileage is taken for the sea distance. It is about 750 miles by ocean from New York to Charleston, and somewhat more to Savannah, but in computing the through distance from New York via those ports to some interior city of the South the steamship line to Charleston is credited with only 230 miles and the line to Savannah with but 250 miles. The distance by rail from Charleston to Atlanta being 300 miles and from Savannah 295 miles, the "rate-making mileage" from New York to Atlanta via Charleston is 538 miles and via Savannah 545 miles. The ratio of the rail and ocean portions of the through charge is approximately the ratio of actual railway mileage to constructive sea mileage.

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ATLANTA COMMON POINTS AND THE BALTIMORE-ATLANTA BASE RATE

The general rate system prevailing in the southeastern part of the United States is largely determined by the traffic importance and the strategic position of Atlanta. Several causes combine to give Atlanta an exceptional control over railway rates: It is the center and chief market of the upland cotton belt of the Old South, and, being located at the southeast angle of the Appalachian Mountains, it is the point where the railroads into the South from Baltimore and the Northeast naturally intersect those running into and across the South from both the South Atlantic and the Gulf ports. Moreover, Atlanta is equally distant from Charleston and Savannah, the two leading ports for the exit and entrance of the traffic carried by sea and rail between the South and the region north of the Potomac. Lines radiate from Atlanta in all directions toward the Ohio, the Mississippi, the Gulf, the South Atlantic seaboard, and Baltimore and the Northeast.

Rates between the North Atlantic seaboard states and the southeastern section, as stated above, are controlled by the through charges over the combined sea-and-rail routes via the ports from Norfolk to Jacksonville; and the competition among the steamship lines and among the railways interested in these several ports has naturally made it necessary for them all to offer the same rates between Atlanta, the chief inland traffic center, and the North Atlantic seaboard cities. Moreover, Atlanta exercises another controlling influence over rates. Although the leading inland commercial city of the Southeast, it is only one of many trade centers. Atlanta has numerous competitors, each served by railways competing with each other and often with the

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railways especially interested in Atlanta; and thus it was long ago found necessary to accord the same sea-and-rail rates to Atlanta, Chattanooga, Eufaula, Americus, Athens, and to numerous other towns within the section indicated roughly by a line drawn through the places named. The distance to Chattanooga was much greater than to Augusta, but it was made a common point with Atlanta as regards the sea-and-rail rates.

In the case of the rates by the all-rail lines between the northeastern and southeastern territories, Chattanooga and towns similarly located also have identical all-rail and sea-and-rail charges; while, as was stated above, Atlanta and other common points east of the Chattanooga-Montgomery-Pensacola line have south-bound all-rail rates for most kinds of traffic higher by fixed differentials than the sea-and-rail charges. The north-bound rates are not always less from Chattanooga and its common points than from Atlanta and common points. The rates on compressed cotton, for instance, are less from Atlanta than from Selma, Montgomery, and Rome, and higher than from Macon. In general, the Atlanta common-point territory is a smaller one for the all-rail rates than for the sea-and-rail charges.¹

The all-rail shipments north and south between the South and the Northeast, for the most part, pass through Baltimore, while the steamship lines plying north and south from Baltimore and the ports at the mouth of the James handle a larger tonnage than reaches the Chesapeake and Hampton Roads by rail. Baltimore being the most impor-

¹ For a good account of the rates all-rail and sea-and-rail between the northeastern seaboard cities and Chattanooga-Atlanta common points, consult the decision of the Interstate Commerce Commission in the Chattanooga Case, X I. C. C. Reps. 111-147. Also the decision of the I. C. C. in the Cincinnati Frt. Bureau Case, VI I. C. C. Reps. 195-256.

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tant railroad gateway between the Northeast and the South, and Atlanta being the leading interior railway and traffic center within the South, it naturally follows that the railways connecting Baltimore and Atlanta form the most important trunk line between the North and the South; indeed, the rail rates between Baltimore and Atlanta have an influence upon railway rates throughout the South comparable with the control exercised by the Chicago-New York lines over railroad charges in the territory north of the Ohio and Potomac.

The through all-rail rates from the eastern seaboard cities (Boston to Philadelphia) to Atlanta are fixed differentials above the Baltimore-Atlanta rates. Boston, Providence, and New York have the same all-rail rates south-bound, the differentials above Baltimore being from 2 to 7 cents per hundred pounds for different kinds and classes of commodities. The differentials for Philadelphia above the Baltimore charges are generally the same as for the more northern seaboard cities.

The rates all rail, north-bound, on compressed cotton from Atlanta to Philadelphia and New York are the same, being 3 cents a hundred above the rate to Baltimore, while Boston is charged 8 cents more than Baltimore. Of course, the differential prevailing from or to Boston, New York, or another seaboard city applies to the nearby places within the territory taking the same rate as Boston or the seaboard city in question.

Again, the all-rail rates from the eastern seaports and from the East generally to places other than Atlanta in the southeast territory are fixed with relation to the rates to Atlanta, being higher or lower than the Atlanta rates by differentials acceptable to the interested competitive railways. Thus the influences of the Baltimore-Atlanta rail

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rate are spread quite generally over the southeastern section. It need hardly be stated that the coastwise steamship lines, which regulate railway rates into and out of the South, control the Baltimore-Atlanta rail rates, as well as other railway charges. The effects of coastwise competition are made more widespread because the all-rail rates between the sections north and south of the Potomac are so largely based upon the charges between Baltimore and Atlanta.

A third way in which the charges by rail between Baltimore and Atlanta are made the basis of railway rates in the South will be described in the following paragraphs, discussing the rates upon the large volume of traffic entering the South from the sections north of the Ohio and west of the Mississippi.

RATES TO AND FROM THE SOUTH *via* OHIO AND MISSISSIPPI RIVER CROSSINGS

The development of the South gave rise to an increasing trade southward and northward from and to Cincinnati, Louisville, Evansville, and other cities on the Ohio River. Each of these cities was ambitious both to secure as much as possible of the trade of Atlanta, Birmingham, Chattanooga, and other southern cities, and also to become the chief gateway for the traffic passing back and forth between the Southeast and the centers of food supplies and manufactures in the populous section north of the Ohio. This rivalry of the Ohio River cities with each other was intensified by the competition of the railways connecting them with the South and of the railways leading to the Ohio from Chicago and other northern cities. Moreover, as has been observed, this trade of the middle West with the Southeast—especially the sale of manufactures in the South

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—was in competition with the commerce carried on between eastern seaboard states and the South.

The solution of the two problems presented by the competition of the several Ohio River cities and of the central West with the East was made possible by (1) making the rates the same from all the Ohio crossings to Atlanta and (2) making the rates from the Ohio River to Atlanta equal to the rates from Baltimore to that city. Having agreed upon these two principles, the railways were able to construct the present somewhat complicated but well-adjusted system of interrelated rates. The main features of this system are as follows:

1. The rates from Cairo, Cincinnati, and intermediate Ohio River crossings to Atlanta are, as just stated, the same and equal to the Baltimore-Atlanta tariffs.
2. The through rate from Chicago and other cities in the middle West is the sum of the rate to the Ohio and of the rate on from the Ohio crossing. The rates from St. Louis to southeastern territory are fixed differentials, and not the full local rates, above the rates from the Ohio River. The through rate from any one city—Minneapolis or Chicago, for example—to Atlanta is the same by all Ohio crossings, although the charge to the several Ohio crossings—Chicago to Cincinnati and to Cairo, for instance—may not be identical. In that case the through rate—Chicago-Atlanta or Minneapolis-Atlanta—is the sum of the lowest, or short-line, rate to the Ohio plus the charge from there to Atlanta. Inasmuch as the charge is the same from all the Ohio crossings to Atlanta, the through rates to Atlanta from any two northern points, as Chicago and St. Paul, differ to the same extent as their rates to the Ohio are unlike.

3. The rates to Atlanta from Memphis, an important

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industrial city and a point through which much of traffic reaches the South from the section west of the Mississippi, are four cents less than the rates from the Ohio for all classes and kinds of commodities—i. e., Memphis has a flat differential four cents under Louisville and other Ohio crossings.

4. The rates from the Ohio crossings, St. Louis, and Memphis to the central part of the South (Alabama to South Carolina) are in general adjusted with reference to the Atlanta rates. This is especially true of common points in Georgia, while the control exercised by the Atlanta rates naturally grows less with the increase in distance from Atlanta. The rates across the South to the South Atlantic ports (Jacksonville to Charleston, inclusive) are, as will be shown presently, made independently of the tariffs prevailing on Atlanta business.

5. From the Ohio River, St. Louis, and Memphis, common rates, usually lower than those to intermediate points, prevail to Charleston, Beaufort, S. C.; Savannah, Brunswick, Ga.; Fernandina and Jacksonville, Fla. This enables these seaports to compete on equal terms for the traffic from the middle West and the trans-Mississippi territory. The cotton and other commodities brought across the South to these ports may either be exported to foreign countries or taken coastwise to a North Atlantic port for sale in the domestic market or for reshipment abroad. The relation of the through rates from the Ohio and Mississippi rivers to the South Atlantic ports is illustrated by the following table, showing the rates in cents per hundred pounds on classified traffic and meats, grain, and flour from Memphis to Atlanta and the seaboard:

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*Rates in Cents per 100 Pounds on Classified Traffic and Meats, Flour
and Grain from Memphis to Atlanta and the Seaports
Charleston to Jacksonville*

To	CLASSES						COMMODITIES		
	1	2	3	4	5	6	Meats	Flour	Grain
Atlanta	94	83	74	59	48	37	32	20	20
Seaports	91	76	71	66	54	42	34	19	19

6. The rates from the southeast territory to and beyond Ohio crossings, while made in accordance with the general principles followed in adjusting rates into the South, deviate from those principles more widely than do the tariffs on south-bound traffic. Southern outbound shipments go more largely to the northeastern section of the United States and to Europe than to the states beyond the Ohio and Mississippi. The influence of Atlanta upon the traffic toward the West and Northwest is less than upon that in the opposite direction; nor does the competition of the railways northward to the Ohio River or of the Ohio River cities with each other compel uniform rates to all Ohio crossings from common points in the central portion of the South and Southeast. Ordinarily there are the same rates to all Ohio crossings from common points in the Southeast; but in the case of such an important item of traffic as lumber from Georgia the rates to Cairo, and to Cairo for points beyond, are less than to other Ohio crossings. The rates on lumber from Georgia territory to Cairo are the result of competition, it being necessary to adjust these rates with reference to those from Arkansas and southwestern territory to Cairo.

The system of rates outbound from the Southeast to the Northwest and West is not so definite as is the system of

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correlated inbound tariffs. For the most part, the rates on traffic into the South from all directions are combinations of the rates to the regional gateways and from those gateways to the interior point of destination; the tendency in constructing tariffs for the cotton, lumber, iron, fruit, and vegetables and other staple products sent out of the South is not to make combinations on boundary gateways, but to make such through rates to the eastern, northern, and western markets as are demanded by the conditions of industrial or commercial competition; and, as Mr. Logan G. McPherson says in his book on *Railroad Freight Rates*, "this tendency has been enhanced by the increasing number of railroad companies that have established through lines, either under direct ownership or immediate control, between one region and another and the multiplication in the number of gateways as these through lines have crossed the regional boundaries at different points." It will, however, be understood that this is only a tendency that is modifying what is still the more usual practice of making rates for southern territory on outbound as well as inbound traffic by combining the rates to the boundary with those beyond.

THE " VIRGINIA CITIES " TARIFFS

The cities of eastern and southern Virginia are so located as to complicate the making of rates to and from them. The Chesapeake & Ohio and the Norfolk & Western railroads, which run east and west across the central and southern part of the state, lie along the boundary separating the trunk line and southern territories. Both roads are interested in traffic to and from the South, as well as with the middle West, and in consequence their rates are a compromise of the trunk line and southern systems of rate

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making. Crossing these east and west roads and connecting the Virginia cities with the South are several railroads, notably the great Southern Railway, which competes with the Chesapeake & Ohio and the Norfolk & Western at Norfolk, Richmond, Lynchburg, and other common points; while all the railroads running north and south from tidewater and the piedmont section of Virginia, are required to base their all-rail charges on the joint sea-and-rail rates established by the steamship lines and railways connecting at the busy ports of Norfolk, Newport News, and Richmond. The problems of rate making under these conditions may be indicated by brief reference to the rates into Virginia from the Northeast, from the South, and from the West.

The major share of the traffic between the Virginia seaports and the Atlantic ports to the north and south is carried by water; and the inland Virginia cities ship at least the heavier commodities inbound and outbound more largely by sea-and-rail than by all-rail routes. The through ocean-and-rail rates north and south from the interior cities being thus the combination of a common ocean rate and the charge by rail between the port and the inland destination or shipping point, vary to the extent of the differences in the rail portion of the through charge. At places like Lynchburg, where there is keen railway competition, or at Richmond, where there is both rail and water transportation, the rail rates to Norfolk or Newport News are low, while at a town such as Clarksville, where all the lines to the seaboard are controlled by one company, the charges are higher.

The rail rates to Virginia cities on the traffic from New Orleans and the lower Mississippi Valley—sugar, molasses, rice, coffee, etc.—discriminate widely between the competitive and noncompetitive points. The rail rates from the

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South to Virginia cities are made in competition with the water rates to Norfolk and Richmond, which cities again compete with Baltimore, which has low water rates from New Orleans and the South. Baltimore, Norfolk, and Richmond are competing distributing centers for the trade of the interior cities of Virginia and North Carolina. In general the rail charges from the South are higher to the towns in the southern part of the state south of the Norfolk & Western than to Lynchburg, Charlottesville, Richmond, and other places where the Norfolk & Western and Chesapeake & Ohio either compete with each other or with the Southern. At Lynchburg all these roads compete, and the rates from New Orleans are about twenty-five per cent less than to Clarksville, which may be taken as a typical noncompetitive town in the southern part of Virginia. The lower rates at the Virginia competitive points—such as Lynchburg—are due in part to the low rates accorded Norfolk and Richmond by the Chesapeake & Ohio and the Norfolk & Western, as will be explained presently. The rates from New Orleans to Richmond, because of direct water competition, are lower than to Lynchburg.

The rates between the Virginia cities and the West present even more striking results of competition. The Norfolk & Western unites Norfolk and Richmond with Cincinnati and, by means of a connecting line, with Louisville; the Chesapeake & Ohio joins Newport News and Richmond with both Cincinnati and Louisville; while the Southern Railway, by a more circuitous route, connects those Ohio River cities with Norfolk, Richmond, and Washington. The first line through from Cincinnati and Louisville to Hampton Roads was the Chesapeake & Ohio; and it gave Newport News, Norfolk, and Richmond the low rates prevailing at Baltimore for traffic to and from Cincinnati, in order that

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the Virginia ports might share in the import and export traffic, and might compete with Baltimore for the trade of intermediate territory. Theoretically, the rates from and to Louisville should have been higher than those from and to Cincinnati; but Louisville insisted upon having the same treatment as was given Cincinnati.

When the Interstate Commerce Act of 1887, containing the "long and short haul" clause, was enacted, the Chesapeake & Ohio gave to Lynchburg and other Virginia cities on its lines as low rates as had been given to Richmond and Norfolk—i. e., the Baltimore rates. Later, when the Norfolk & Western was opened, that road made rates to Norfolk and Richmond on a parity with those at Baltimore, and gave to Lynchburg and other Virginia towns on its line rates that did not exceed the low rates to or from Norfolk. The Southern Railway, organized in 1894, consolidated lines leading from Washington, D. C., Richmond, and Norfolk across eastern and southeastern Virginia, and competed with the Norfolk & Western by naming equal rates at junction points. In other words, the Southern Railway, also, gave Lynchburg and other competitive points in Virginia rates to and from Louisville and Cincinnati equal to the rates between Cincinnati and Baltimore over the Baltimore & Ohio and other roads into Baltimore.

Rates to the noncompetitive points on the lines of the Southern Railway in Virginia, as elsewhere, are generally made by the basing-point system; but the three railways interested in the traffic between the Louisville-Cincinnati district and the Virginia cities accorded the noncompetitive towns in southern Virginia, such as Clarksville, somewhat more favorable rates on that traffic than would have resulted from a strict application of the basing-point method of rate making. This, however, was not true of

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the large traffic between the noncompetitive Virginia towns and Chicago and St. Louis. On this business there is greater disparity between the rates at common and local points.

This is due to the fact that the rates from Chicago and St. Louis to Lynchburg, Norfolk, and other Virginia cities on the Norfolk & Western, and the Chesapeake & Ohio are made equal to the trunk line rates to Baltimore, while the charges from Chicago or St. Louis to Danville and other noncompetitive Virginia points are a combination of the rates from Chicago or St. Louis to the Ohio River plus the rates from Louisville or Cincinnati to the local point in Virginia. Stated in general terms, the carriers from Chicago and St. Louis prorate with the Norfolk & Western and the Chesapeake & Ohio dividing a low through rate practically upon a mileage basis, while for points south of the Norfolk & Western there is no prorating, the carriers from Chicago or St. Louis and the carriers from Louisville or Cincinnati each receiving its local rate to and from the Ohio. Vice President Culp of the Southern Railway explains these rates as follows: "Rates from all points in so-called Central Freight Association Territory, which includes Chicago, to local points in Virginia, are made by combination of the rates to and from Ohio and Mississippi river crossings, there being through rates from Ohio and Mississippi river crossings to local points in Virginia, or by combination of rates to and from Virginia cities. The first-class rate from Chicago to Norfolk and Lynchburg is 72 cents per hundred, and the first-class rate from Chicago to Danville is \$1.03; based to Cincinnati, 35 cents; beyond, 68 cents; in other words, the Cincinnati combination makes 5 cents less than the Lynchburg combination, the local rate from Lynchburg to Danville being 36 cents per hundred."

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Farther south of the Norfolk & Western, in North Carolina, such points as Raleigh and Greensboro pay higher rates from the West and Southwest than do the noncompetitive Virginia cities, the rates by the direct lines into North Carolina from the West and Southwest being kept up to the sum of the competitive rate to a basing point on the Norfolk & Western plus the local charge south from the basing point.

The rates from the eastern seaboard cities to Virginia and North Carolina are, in some instances, the sum of the water rate to Norfolk, or some other Virginia port and the rail rate inland. This is not in every case true. The port combination has a bearing on the rates, but many of them are arbitrarily made, and in some cases less than the port combination; and there is no fixed relation between the all-rail and the water-and-rail rates to and from eastern territory and points in Virginia and North Carolina. The Virginia cities would have a rate from the North somewhat lower than the North Carolina cities would have. The same would be true of shipments north-bound.

The foregoing paragraphs attempt to describe the way in which rates are made to and from Virginia cities and not to criticise the methods of rate making. A noncompetitive point like Danville fares ill as compared with a place like Lynchburg or Richmond, which enjoys the low rates accorded Baltimore. The rates to and from Danville were made the basis of a case before the Interstate Commerce Commission which decided in 1900 that, while places like Lynchburg on the Norfolk & Western might justly be given lower rates than Danville, Va., and points in North Carolina, the actual discrimination was unreasonable. The interstate railroads did not feel that they could afford to reduce the rates in the territory south of the Norfolk &

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Western, and the decision of the commission was successfully contested in the Federal courts.¹

THE MISSISSIPPI RIVER AND RAILWAY RATES

Formerly the traffic on the Mississippi River and its main tributaries was large and included practically all kinds of commodities. Where traffic could be shipped by water the railroads were compelled to adjust their rates to meet the competition of the river boats. Now, the traffic on these rivers consists mainly of a few low-grade commodities—coal, lumber and logs, sand, cement, stone, and brick, together with minor quantities of grain, cotton, cotton seed, molasses, and miscellaneous articles. The river traffic at St. Louis is now less than 400,000 tons annually, and of this sum less than 50,000 tons is traffic with towns below Cairo. The long-distance traffic on the Ohio and Mississippi has now become much less important than the local, short-distance business—coal, lumber, and small quantities of grain constituting most of the tonnage of through shipments.

With the decline in river traffic, its influence upon rail rates has naturally grown less, but it has not disappeared. The present rates of the railroads paralleling the Mississippi are no doubt partly due to the continuance of past adjustments made when river traffic was large and water competition was of controlling force; but rail charges are even now influenced to an appreciable extent by water competition, actual and possible. The truth of this last statement is indicated in a general way by the fact that "the rates charged by the railways paralleling the Mississippi north of St. Louis, where water traffic still prevails,

¹ 122 Fed. Rep. 800 (1903); 195 U. S. Rep. 639 (1904).

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are lower for the same commodity and distance than the rates charged for similar distances by railways paralleling the Missouri, which is no longer a commercial factor."¹

The rail rates between Cairo, at the junction of the Ohio and Mississippi, and New Orleans north-bound and south-bound, are kept low enough not to provoke water competition; and the adjustment as between St. Louis and Chicago, as regards rates to and from New Orleans, is made by charging St. Louis and Chicago fixed differentials above the Cairo-New Orleans rates. On first-class traffic the rate from Cairo to New Orleans is seventy-five cents, from St. Louis ninety cents, and from Chicago \$1.10. On second-class traffic Chicago is fifteen cents above St. Louis; on third class ten cents; and the differentials for lower classes are correspondingly less.

The rail rates between points on the Mississippi, Missouri, and Ohio rivers, as presented in the report made by the Special Board of Engineers upon the proposed fourteen-foot waterway from Chicago to the Gulf,² show that river navigation must have some effect upon railroad charges. The rail rates from St. Louis to New Orleans, 700 miles, are the same as to Greenville, Miss., 250 miles nearer St. Louis—all points from Greenville to New Orleans inclusive taking the same rates from St. Louis. The same is true of the rail charges from Kansas City to Greenville, New Orleans, and intermediate river cities. The rail rates north-bound from New Orleans are the same to all places from Natchez (214 miles) to Memphis (396 miles), and to intermediate points, including Vicksburg and Greenville.

¹ F. H. Dixon, "A Traffic History of the Mississippi River," Doc. 11, National Waterways Commission, Dec., 1909. Washington: Government Printing Office.

² House Doc., 61 Cong., 1 Sess., No. 50 (1909).

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This application of a common rate to a wide zone is not to be attributed entirely to river competition; for other instances of this principle of rate making could be given where there was no waterway to compete with; moreover, the low rates to and from New Orleans are no doubt made to promote the export and import trade of that port; but it seems certain that the railways along the Mississippi have made their rates with a view to causing traffic to move by rail rather than by water. The *Report*, just referred to, upon the Mississippi River Survey, calls attention to this in the statement that "As the railroads will carry almost all articles of freight from New Orleans, 396 miles, to Memphis at the same rates as 214 miles to Natchez, shippers (by water) . . . have nothing to gain to points above Natchez. In the same way shippers have little to gain by using water transportation from St. Louis to points below Memphis and nothing to points below Greenville. Consequently, packets plying between Memphis and Natchez must depend for their support on local business within the limits, so long as the railroads maintain these rates and can take care of the business."

A railroad paralleling the Mississippi, but located some distance from the river, as is the more easterly one of the two Illinois Central lines from Cairo to New Orleans, may charge a higher rate to an intermediate point like Jackson, Miss., than to New Orleans. Thus, the rates from St. Louis to Vicksburg for most classes and commodities are the same as to New Orleans; while the charges to Jackson in the same latitude as Vicksburg, but not on the river, are higher than to Vicksburg or New Orleans.

The influence of the Mississippi is noticeable in the case of a railroad as distant from the river as is the Louisville & Nashville, connecting Cincinnati with Mobile and

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New Orleans. The same rates are made to Mobile as to New Orleans, to enable Mobile to compete with its larger rival. Most points halfway, or more than halfway, from Cincinnati to Mobile are charged higher rates than Mobile. This is not true of Decatur and Birmingham, Ala., where railway competition has forced charges down, but is true of as important a basing point as Montgomery.

RATE MAKING IN TEXAS, AND TEXAS COMMON POINT TERRITORY

Railway rates in Texas are clearly the result of three controlling factors. The state is, first of all, one of great size; and, with the exception of the extreme west, its level or rolling lands are unbroken by mountain barriers. Its oil wells and its timber in the east are valuable resources, but are of little importance in comparison with the great agricultural wealth of the state whose farms now stretch in almost unbroken continuity westward nearly to the one hundredth meridian. The first prerequisite of railway rates in Texas is that they shall permit farming to be carried on profitably over the widest possible territory.

The second condition to be met in Texas rate making is to afford the agricultural output of the state a ready and cheap outlet to the Gulf ports. The greater share of its chief crop, cotton—whose annual value averages \$200,000,000—must be shipped abroad, and mainly through Houston and Galveston. It is, moreover, the definite aim of the people of the state to require the railroads to construct their rate schedules in such a way as to preserve to the seaboard cities the maximum share of the commerce of the state.

The third necessity as regards railway rates in Texas has been that the railways from St. Louis, the great jobbing

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center, and from Chicago, Indianapolis, and other large sources of manufactures north of the Ohio, should give shippers such rates as to enable them to sell their goods throughout the wide state in competition with goods from the East brought to Galveston by steamship lines and shipped inland by rail. Likewise, the rates on shipments outbound must be such as to enable the railroads extending north and northeast to secure a share of the traffic.

These three conditions have been met by the two systems of rate making prevailing in the state: (1) The system of graded and maximum rates for intrastate traffic; and (2) that of equal rates throughout Texas common point territory for interstate traffic. These two plans of rate adjustment and their economic results may be briefly set forth:

(1) For traffic within the state, rates increase with, but not necessarily in strict proportion to, distance for a specified number of miles beyond which the "maximum" rate applies to all places without regard to distance. The number of miles through which the charges are graded up to the maximum varies with different classes and commodities. For articles of the first class, the maximum rate applies at and beyond 245 miles from point of shipment; for cotton, rates rise for 160 miles; for flour, hay, and grain, 140 miles; and for coal, 790 miles.

The application of this system of graded and maximum rates to cotton, the chief product of the state, illustrates both the method and the purpose of this rate policy. As stated by Mr. McPherson in his book on *Railroad Freight Rates*, "The State Railroad Commission has graded the rates on cotton for 160 miles from Houston, and established a maximum rate of forty-nine cents (per 100 pounds) for any greater distance. The rate to Galveston is six cents

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per 100 pounds more, which has the effect of making a rate of fifty-five cents per 100 pounds for all distances 210 miles or more from Galveston. About twenty-five per cent of the cotton which moves through Galveston is grown within 210 miles of Galveston, so that this basis means that seventy-five per cent of the cotton produced in the state is carried to the Gulf at the same rate—the rate (made by the railway companies) to New Orleans, for export, being $56\frac{1}{2}$ cents, which is the Galveston rate plus $1\frac{1}{2}$ cents, the amount of the wharfage charge at Galveston. The plantation owner several hundred miles in the interior, therefore, receives as much for his cotton as the grower within 210 miles of the Gulf.”

The other characteristic feature of the rate structure in Texas is that the rates on interstate all-rail traffic, inbound and outbound, are the same to all points within the state, except the western section where population is scarce and traffic light. The “common point territory” extends from the Gulf, Sabine and Red rivers to a line drawn through Amarillo, in the northwest; Big Spring and San Angelo in the west; Brady, Llano, San Antonio, Laredo, and Corpus Christi. With the exception of the lower through rates from the north to Houston and the Gulf than are given to intermediate stations, the rail rates on interstate traffic are the same throughout this wide territory.

This policy of rate making was adopted to enable the all-rail lines connecting Texas with Kansas City, St. Louis, the cities north of the Ohio, and in the East, to compete with the rates by water and rail from the East via the Gulf ports. St. Louis is the exterior trade center from which Texas receives large quantities of manufactures and supplies, some of which originate at St. Louis, but more of

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which are assembled there from the industrial districts north of the Ohio and Potomac; and the importance of the traffic to and fro between St. Louis and Texas has increased with the rapid development of Dallas, Fort Worth, and the whole northern part of the state. The rivalry of the ocean and rail routes via the Gulf and via all-rail lines from the North has been and is so keen as to compel the railroads to grant equal interstate rates throughout the greater part of the state.

Kansas City has the same rates as St. Louis on traffic to and from Texas common points. Memphis and New Orleans have equal differentials below the St. Louis schedule, ten cents a 100 less for first-class goods; while Chicago and other places north and east of St. Louis have definite differentials above that city. On first-class freight, the differential above St. Louis is eleven cents for Louisville, twenty cents for Cincinnati and Chicago, forty cents for Detroit and Cleveland, and fifty cents for Pittsburg—other classes and special commodities having appropriately lower differentials.

Interstate rates to and from a place in Texas outside the common point territory are the sum of the common point rate plus the amount of the intrastate graded-and-maximum rate between the boundary of the common point territory and the place in question. Thus the highest rate payable to or from any town in the state is the sum of the "maximum" and the "common point" rates.

The policy of granting such a large territory equal rates was adopted by the railroads not by preference, but because it seemed to be the best way to deal with an otherwise uncontrollable condition of competition. Year by year, however, railway interrelations become more stable, and associated action even among rail and water carriers

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becomes more effective in the regulation of competition. Moreover, the railways in the Southwest have long felt that the rates on Texas business were unduly low. It is not surprising that efforts are being made to modify the common-point system of rate making. Indeed, this has been accomplished to some extent as regards grain and lumber tariffs. Grain enters the state only from the north, while lumber is brought in mainly from Louisiana; it has thus been possible to divide the state into fifteen districts in making grain rates, and to fix the charges on lumber from east to west according to groups of cities.

An early abandonment of the Texas common-point system of interstate rates is, however, not probable. The widespread agricultural development of the state has been fostered by this method of rate making, as well as by the intra-state graded and maximum tariffs. The same is true of the distribution generally over the state of jobbing centers, which, under present conditions, are to be found about fifty miles apart; and no one city is able to draw the jobbing trade to itself to the detriment of other places. The people of the state are in favor of the maintenance of railway rates that promote the general spread of agriculture and the distribution of the mercantile trade, and will do what they can to oppose a change in the present railway rate policy. The state can, of course, regulate interstate rates only indirectly, and thus cannot compel the railroads to continue to grant equal interstate rates to all places in the present common-point territory. A gradual modification of the present interstate tariffs may be expected of the carriers as they find an opportunity to exempt one kind of traffic after another from the present common-point system of rate making, and the change will be to the advantage of the carriers.

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REFERENCES

1. Freight Bureau of the Cincinnati Chamber of Commerce *vs.* the Cincinnati, New Orleans, and Texas Pacific Railway Company and Others. The "Cincinnati Freight Bureau Case," VI Interstate Commerce Commission Reports, 195-256. (Explains the way rates into the South are made from the East and from the central West.)

2. Board of Trade of Troy, Alabama *vs.* Alabama Midland Railway Company and Others. The "Troy Case," VI Interstate Commerce Commission Reports, 1-35. (Good account of the basing-point system of rate making.)

3. The Chamber of Commerce of Chattanooga *vs.* The Southern Railway Company and Others. The "Chattanooga Case," X I. C. C. Reps., 111-147. (Operation and effects of the basing-point system well described.)

4. City of Danville and Others *vs.* Southern Railway Company and Others. The "Danville, Va., Case," VIII I. C. C. Reps., 409-442 and 571-584. (An explanation of the Virginia cities tariffs.)

5. "Railways in the United States in 1902: Part II, A Forty-year Review of Changes in Freight Tariffs." Published by the Interstate Commerce Commission (1903). (Contains numerous tables of railway rates into and out of the South.)

6. Report by a Special Board of Engineers on Survey of Mississippi River, House Doc. 61 Cong., 1 Sess., No. 50, 1909. (This report on the proposed fourteen-foot waterway from the Lakes to the Gulf discusses, among other things, the rates on the railways competing with the Mississippi River.)

7. F. H. Dixon, "Traffic History of the Mississippi River System," Doc. 11, National Waterways Commission, December, 1909. (Considers the influence of the Mississippi River upon railway rates.)

8. L. G. McPherson, "Railroad Freight Rates," New York, 1909. (Has an especially good account of railway rates in Texas.)

9. J. M. Culp, Vice President, Southern Railway Company, "The Construction of Freight Rates in the South." (An address delivered at Harvard University, January 29, 1909.)

CHAPTER XXIII

RATE MAKING IN WESTERN TRUNK LINE, TRANSMISSOURI, AND SOUTHWESTERN TERRITORIES

System of adjusting rates by fixed differentials—Commercial conditions out of which this system developed—Adjustment of rates to the Missouri River crossings from and through Chicago and St. Louis—Combinations of rates west-bound and east-bound on the Mississippi and Missouri rivers—Rates to Missouri crossings from Milwaukee, Peoria, Cairo, Memphis, and St. Paul—Adjustment of rates to St. Paul via Chicago and St. Louis, and from St. Paul to Missouri River—Interstate rates in Wisconsin, Minnesota and Iowa—East-bound rates and routes from region west of the Missouri River—Rates and routes west-bound from points east of Mississippi to points west of Missouri River—Rates to Colorado and Utah “Common Points”—To Montana “Common Points”—References.

THE characteristic features of the rate system prevailing in the Southern States east of the Mississippi River are the importance given to basing points in the determination of competitive and local charges and the far-reaching influence of water competition upon railroad rates throughout the section. Texas has a unique system of graded and “maximum” rates upon intrastate traffic, and is favored with common rates upon interstate business throughout most of its wide area.

North of the Ohio and Potomac and east of the Mississippi River and Lake Michigan an entirely different rate structure has been established. Here through rates east-

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and west-bound between the Eastern States and those north of the Ohio are based on the Chicago-New York rates, the through charges obtaining at other places being, with minor exceptions, percentages of the base rate determined by their distance from New York. The most important modifications of this plan of rate making in the territory of the trunk lines are the fixed differentials to the seaboard cities and the common rates, based on New York, prevailing throughout New England on through traffic to and from the central West.

West of Lake Michigan and of the Mississippi River, south of the Wisconsin-Illinois boundary, a third general system of railway charges has developed, the salient characteristic of which is a general adjustment of rates by fixed differentials above or below the rates at the dominating trade centers and main river crossings. This general adjustment of rates by fixed differentials is supplemented to some extent by making the charges at certain secondary competing points percentages of the rates at a primary center of industry and trade. Moreover, the practice prevails of extending the rates at a large city where competition is active throughout the district of which it is the center.

The origin and persistence of the system of rate differentials in the territory west of Chicago and St. Louis are the clear result of commercial forces. With the development of the central West, Chicago and St. Louis became the two most powerful rivals for the trade of the upper Mississippi section and for the entire Missouri River Valley. The first step in the adjustment of the trade relations of these two cities was taken when the competing railways by which they were connected with the East agreed upon the relative rates to be accorded the cities on traffic to and from the Atlantic seaboard. This was settled by the percentage

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tariff system, and St. Louis rates were made 129 per cent, later 116 per cent, of the Chicago-New York charges.

The next step taken was to establish such rates west from Chicago and St. Louis as would allow goods through or from either city to be sold under equally favorable conditions in all Missouri River cities from Kansas City to Omaha. To do this two rate adjustments were necessary:

(a) The rates from Chicago to the Missouri River were made higher than the rates from St. Louis by fixed differentials, formerly higher than at present, but now ranging from twenty cents a hundred pounds for first class to five cents for fifth class. This offset the higher rates paid by St. Louis and other Mississippi River points on goods to and from the East.

(b) The through rates between the East and the several Missouri River crossings were made the same via Chicago and St. Louis. These adjustments not only permitted both Chicago and St. Louis to trade at and beyond the Missouri River, but also enabled the cities on that river to engage under like conditions in the trade with the vast section of country to the west and southwest of the Missouri.

Rates on east- and west-bound traffic between the East and the Missouri River and places farther west—although adjusted, as here explained, with reference primarily to the Chicago and St. Louis charges—are in fact combinations of the rates to and beyond the Mississippi River. Historical reasons account for this. Railroads reached the Mississippi some time before that stream was bridged. The railroads from the East terminated at the east bank, those to and from the West, usually owned by different companies, at the west side of the river. Traffic and cars were ferried across the stream. Thus rates on traffic in each direction were made to and from the river, and through charges were

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combinations on the crossings. The same facts were true of the Missouri River. In course of time both streams were spanned by railway bridges at all crossings, and through lines from Chicago, as well as from St. Louis, to the Rocky Mountains came to be operated, each under a single management; but the previous practice of making rates by combinations on the river crossings continued.

The rates each way between the region west of the Missouri River and the section east of the Mississippi—Denver to New York, for instance—are the combination of three rates—those east of the Mississippi, those between the rivers, and those west of the Missouri. It does not necessarily follow from this that the through charge is the sum of the three locals—it would ordinarily be less than such an amount—but, whatever the through rate is, the lines east of the Mississippi, those west of the Missouri, and those connecting the rivers each take a “proportional” corresponding closely to the ratios of the three rates combined in the through charge.

Cities along the Missouri River from Kansas City to Omaha are reached from the East not only by railroads crossing the Mississippi at St. Louis, but also by lines crossing that river at various more northerly points. Some of these lines pass through Chicago, others lie to the south of Chicago, while others extend westward from Milwaukee. The competition of the many lines made it necessary (a) to grant the same rates to the Missouri River points, from Kansas City to Omaha, via all Mississippi crossings from St. Louis to Dubuque, inclusive, and (b) to make the rates equal from all Mississippi River crossings, St. Louis to Dubuque, the same to all points on the Missouri from Kansas City to Omaha, inclusive.

The short lines between the Mississippi and Missouri

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rivers are about 200 miles long, that from Hannibal to St. Joseph being 196 miles and that from Hannibal to Kansas



CHART I.

City 199 miles. From St. Louis to St. Joseph is 302 miles and to Kansas City 277 miles. The distance between the

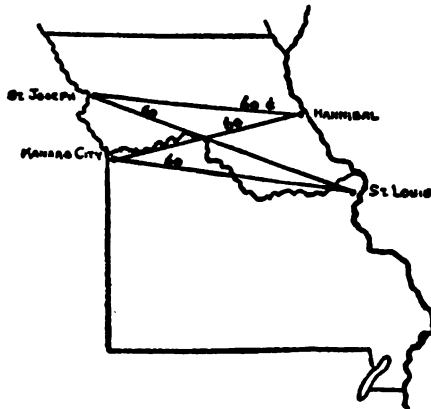


CHART II.

rivers across Iowa is approximately 350 miles, while for diagonal interstate routes, as from Dubuque to Kansas City

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or St. Louis to Omaha, the lines are still longer. The distance from St. Louis to Omaha by the Missouri Pacific Rail-

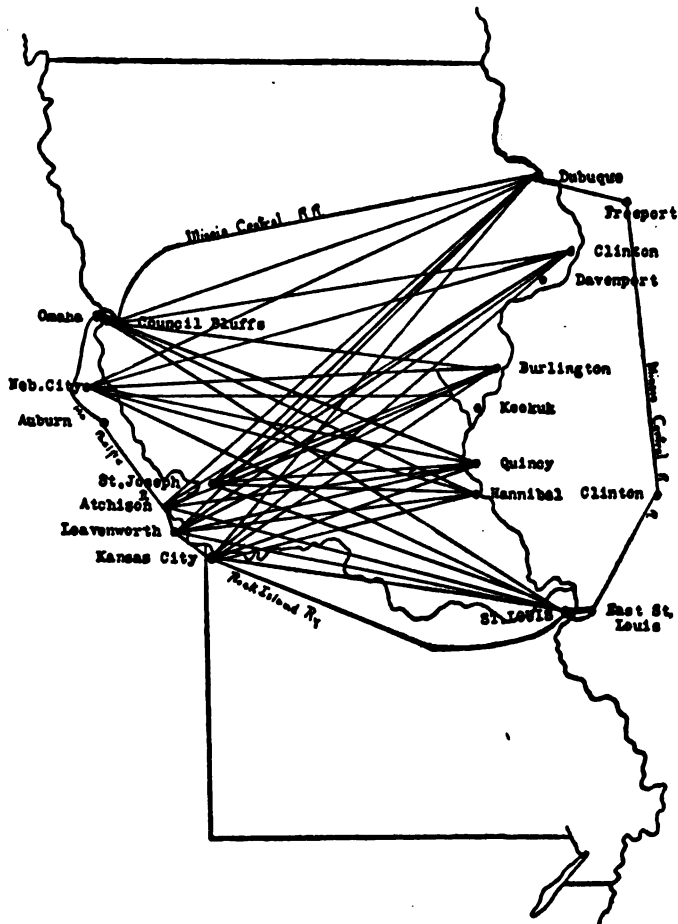


CHART III.

way through Missouri, Kansas, and Nebraska is 488 miles, while by the Illinois Central through Illinois and Iowa the line is 703 miles. (Consult Charts I, II, and III.)

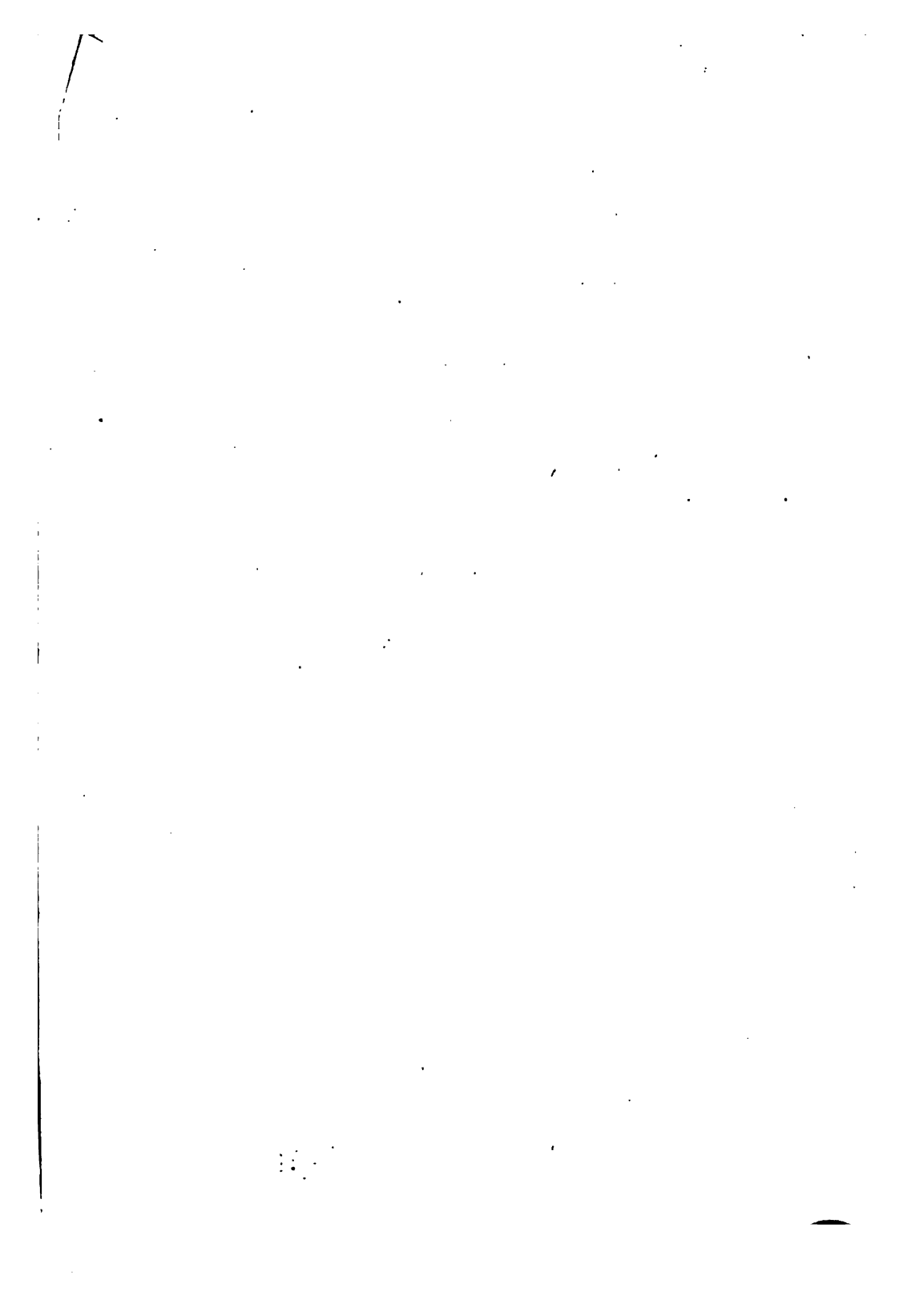
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On first-class freight the rate from Dubuque, St. Louis, and intermediate crossings to Omaha, Kansas City, and places on the Missouri between them is sixty cents per hundred pounds; from Chicago to these Missouri crossings the first-class charge is eighty cents. On fifth-class goods the inter-river rate is twenty-seven cents and the rate from Chicago thirty-two cents. The same principle applies to rates on traffic east-bound from the Missouri River.

The rates from numerous places to the Missouri are adjusted with reference to the charges from Chicago and St. Louis. Milwaukee rates are on a par with those to and from Chicago. From Peoria to the Missouri River, Omaha to Kansas City, the first-class rate is ten cents under Chicago and ten cents above St. Louis. The rates from Chicago, Peoria, and St. Louis to Sioux City are the same as from Chicago to Omaha—eighty cents, first class; to Sioux Falls the charges are four per cent above those to Sioux City. From Memphis to Kansas City the rates are the same as from Chicago; to other Missouri River crossings the Memphis rates are two cents, first class, above those from Chicago. Cairo has the Chicago rates to all the lower Missouri River crossings, Kansas City to St. Joseph, with a two-cent higher rate, first class, to Nebraska City and Council Bluffs.

The first-class rates to the several Missouri River crossings from Chicago, Peoria, Cairo, Memphis, and from St. Louis and Dubuque, are stated on the accompanying Chart IV. This map also indicates the adjustment of rates as between St. Paul and Chicago, concerning which a word of explanation is necessary.

The railroads connecting St. Paul and Minneapolis with the East by way of Chicago are obliged to make rates in competition both with the lakes-and-rail route via Duluth and Superior and with the Canadian all-rail lines. Traffic



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is also handled between the Twin Cities and the East through St. Louis; and another element complicating the situation is that St. Paul and Minneapolis, being important manufacturing and distributing centers, are interested not only in trade with the East, but also in trade with the cities on the Missouri and, through them, with the region to the west and south of that river.

This complex problem of rate making was solved by adjusting the rates between Chicago and Minneapolis partly with reference to the Chicago-Omaha charge and partly with regard to the rates prevailing over the lake-and-rail and the Canadian all-rail lines. The local rate on first-class traffic from Chicago to Minneapolis is 60 cents, three fourths of the Chicago-Omaha rate; but on other classes the ratios vary somewhat. The Chicago-Minneapolis share of the through rates on business originating in Eastern Trunk Line territory is much lower than the local rate from Chicago to Minneapolis. This is due to the competition of both the lake-and-rail routes and Canadian all-rail lines with the railway lines through Chicago. The present proportional rates from Chicago to St. Paul and Minneapolis on through traffic from the East, governed by the Official Classification, are:

Class	1	2	3	4	5	6
Cents	40	34	26	18	16	13

The rates between the Twin Cities and St. Louis are five per cent above the Chicago-St. Paul tariffs; while the following rates prevail from St. Paul and Minneapolis to the Missouri River crossings: To Sioux Falls and Sioux City the same rates as to Chicago; to Omaha and Nebraska

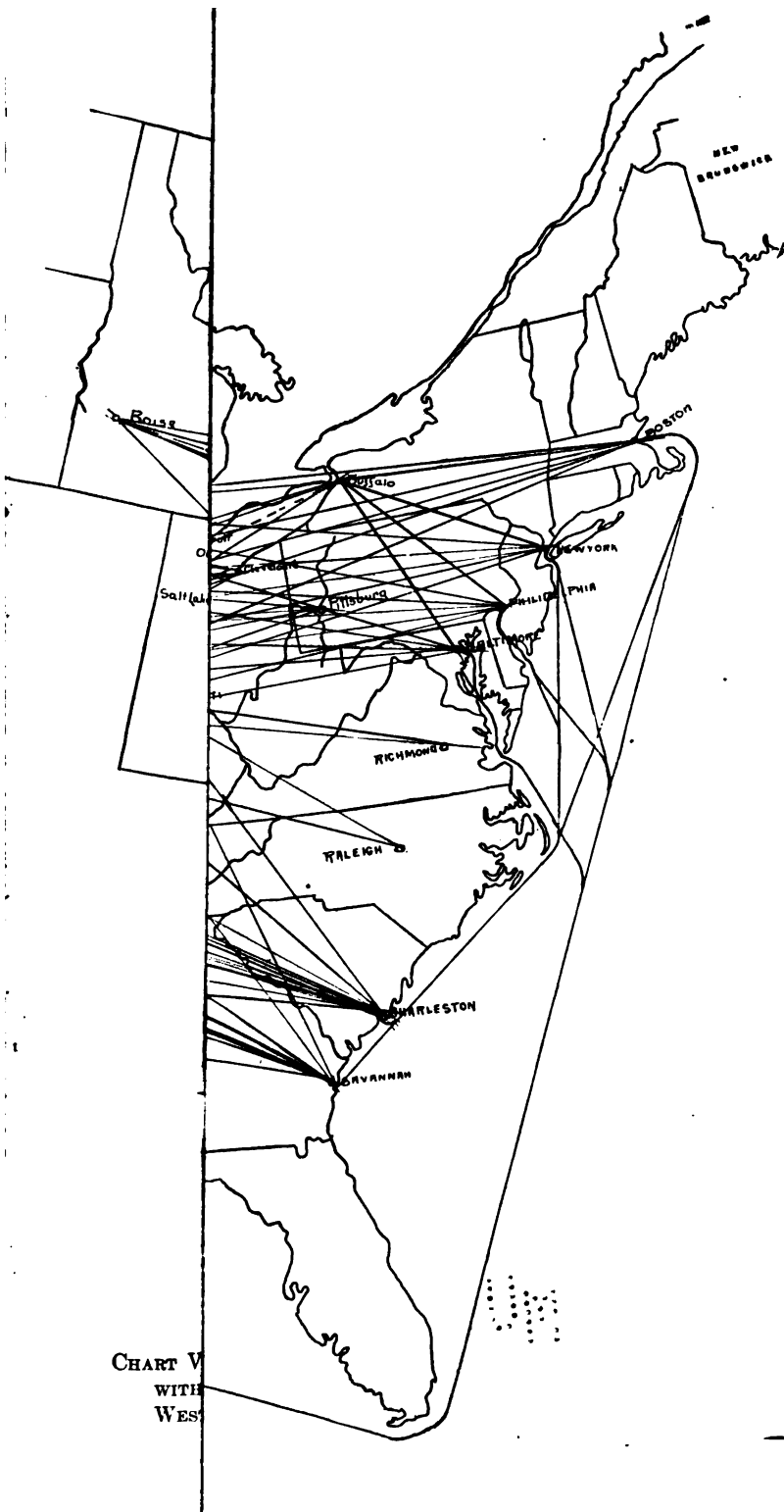
FREIGHT CLASSIFICATION AND RATES

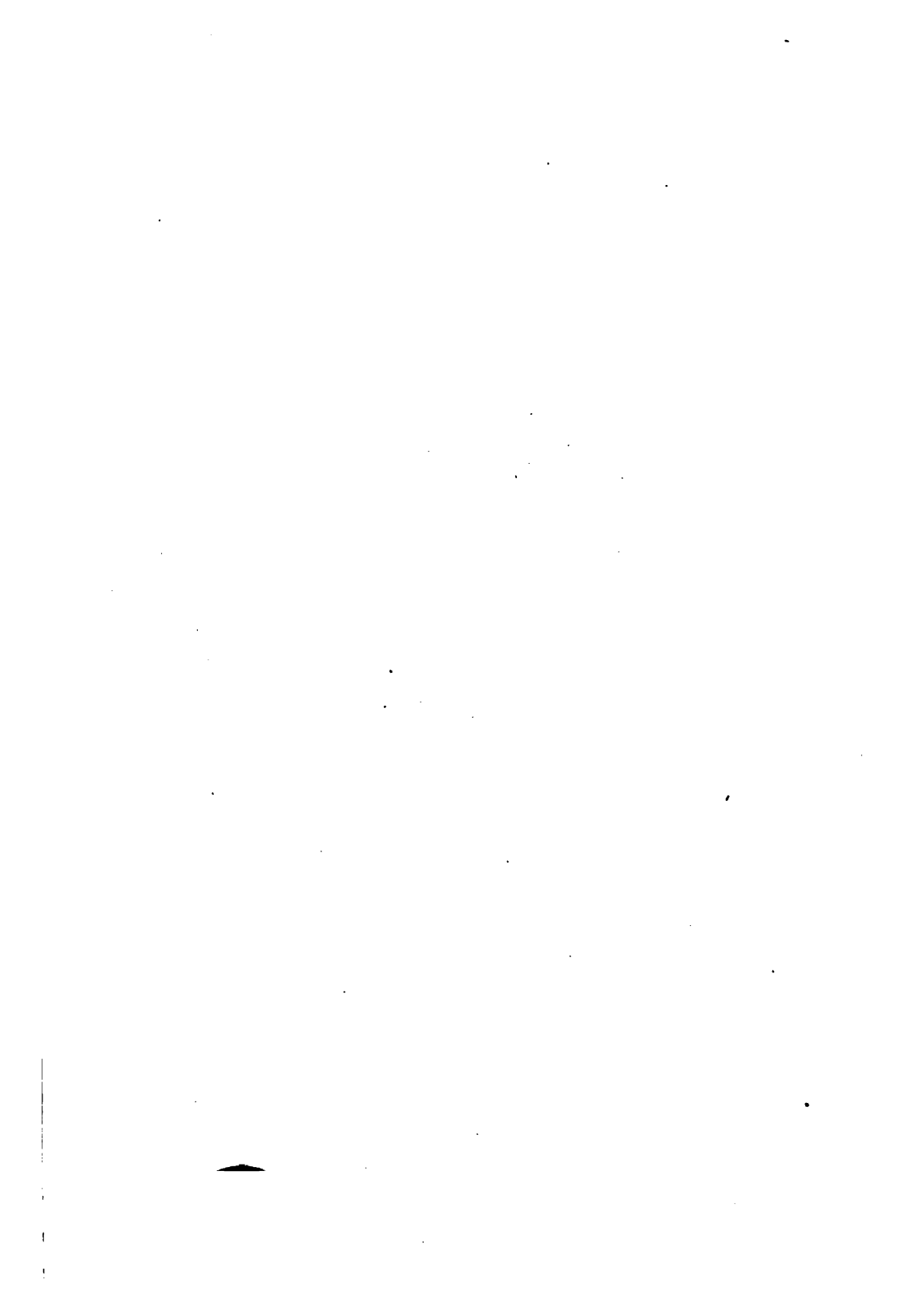
City the charges are equal to the rates from Chicago to those cities; and to St. Joseph, Atchison, Leavenworth, and Kansas City five cents, first class, above the rates from Chicago to those crossings. The adjustment of rates to and from St. Paul and Minneapolis is partly by percentages and partly by fixed differentials.

The adjustment of rates on interstate traffic to and from Wisconsin, Minnesota, and Iowa are made, to a large extent, with reference to Chicago-St. Paul or St. Louis-St. Paul rates. "Duluth takes fixed arbitraries above St. Paul. The intervening territory in Wisconsin, between Milwaukee and St. Paul, is built on arbitraries over either Chicago, Milwaukee, or St. Paul."¹ Another chain of relationships starts with the St. Louis-St. Paul tariffs. The rates from St. Louis to Des Moines are adjusted with reference to the rates from St. Louis to St. Paul; the rate from Chicago to Des Moines is closely related to the rate from St. Louis to that city; and the rates from Chicago to interior points in Iowa, such as Cedar Rapids, Ottumwa, and Marshalltown, are adjusted with reference to the rates from Chicago to Des Moines.

The rates referred to thus far in this chapter have been given as those from one city to another; but it is the general practice in rate making to apply the tariffs of important towns to considerable districts. With the basing points are grouped adjacent cities and towns. The Burlington, Iowa, rates, for instance, are applied to towns as far distant as Davenport, Iowa, and Moline, Ill. Alton takes the St. Louis schedule. A change in rates from Chicago to Omaha would alter any to Lincoln, Neb.

¹ R. Mather, "How the States Make Interstate Rates," in *Annals, American Academy*, vol. xxxii, p. 110 (July, 1908).





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The wide section of country west and southwest of the Missouri, including the states between the river and the mountains and those of the eastern half of the Cordilleran plateau, is connected with the East by numerous routes and combinations of lines, direct and circuitous. Montreal and Galveston are competitors for the traffic of Helena, Salt Lake City, or Santa Fé. The mountain and plains states ship and receive tonnage by perplexing combinations of all-rail, lake-and-rail, and ocean-and-rail routes in a manner suggested by the lines on Chart V.

The main traffic east-bound from the Dakotas, Nebraska, Kansas, and Oklahoma consists of grain and live stock. From the next tier of states come cattle, fruits, and minerals. The grain traffic is largest, and is highly competitive, and "there is no more sensitive adjustment in existence than grain rates."¹ They must be so adjusted that the grain from all over the Northwest and Southwest may reach eastern markets at practically equal costs. "Broadly speaking, the rates are so adjusted on grain from an initial shipping point of the West that the local rate to Kansas City plus the through rate from Kansas City to the East, the local rate to Omaha plus the through rate from Omaha to the East, the local rate to Chicago plus the through rate from Chicago to the East, and the local rate to St. Louis plus the through rate from St. Louis to the east, shall aggregate the same total."² Of course, the through grain rates from west of the Missouri River to destinations east of the Mississippi are combinations of rates to the Missouri, from that river to the Mississippi, and from thence eastward, each of these three parts of the through line receiving the stipulated "proportional" of the reduced through

¹ R. Mather, *Annals Ibid.*, p. 113.

² L. G. McPherson, "Railroad Freight Rates," p. 122.

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tariff. When the grain moves from the Northwest to Chicago the combination of rates is on Chicago; when from the Southwest through St. Louis, Cairo, or Memphis, the combination is on the Mississippi River crossing.

In the Southwest—Missouri, Kansas, Oklahoma, Arkansas, and Texas—the railroads to Galveston and New Orleans compete for the corn and wheat traffic against the lines to the East via Kansas City or St. Louis. At times this competition has led to active rate wars. At present the export rate on wheat is five cents a hundred pounds less via the Gulf ports than via Baltimore, the rates through Philadelphia, New York, and Boston being higher than those through Baltimore by the amount of the seaboard differentials on grain traffic. In the Northwest the Canadian lines, all-rail and lake-and-rail, to Montreal are competitors of the American rail and lake-and-rail routes, and the rates are necessarily so adjusted as to keep the through export rates to Europe practically the same by all gateways.

The rates from the Mississippi River and points east thereof to the region beyond the Missouri River have now to be considered. Ordinarily the rates to places in Nebraska, beyond the relatively small section taking the Omaha tariffs, are combinations of the charges to Omaha plus the local from there westward. Similarly, points in Kansas west of those taking the Kansas City rates are charged the rate to Kansas City plus the local to destination. But the through rates from St. Louis to the larger towns in Kansas, such as Wichita, are a percentage of the combination—i. e., of the rate to Kansas City plus the local from there on. Some railroads running from St. Louis to Kansas points without passing through Kansas City have through rates as low as eighty per cent of the combination on Kansas City. In general, however, the rates to places

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west of the Missouri as far as Denver are fixed by combining rates to and beyond the Missouri crossings.

The rates to and from Denver are applied to Colorado Springs, Pueblo, and Trinidad, the same rates to these Colorado common points being made necessary from the fact that these cities are served by lines through them from the north southward and from the south northward. The rates on first-class traffic from Chicago to Colorado common points are twenty cents above those from St. Louis and other Mississippi crossings and eighty cents above those from the Missouri crossings.

The traffic between Colorado and the north Atlantic seaboard is in part handled by sea-and-rail lines through Charleston and Savannah and through Galveston. "Merchandise for this western territory moves from the East by every conceivable route. Every all-rail line and every conceivable combination of rail lines publish the rates. During lake navigation daily boats carry this merchandise to Chicago, Milwaukee, and the head of the lakes. It is handled by steamer in connection with rail lines from every South Atlantic port from Norfolk to Jacksonville. There is a steamer load dispatched daily from New York and given to the rail lines at the port of Galveston, Tex."¹

The ocean-and-rail routes through Charleston and Savannah and also those via the Gulf compete with the all-rail and lake-and-rail lines between Colorado and the East; and, in order to obtain tonnage for their more circuitous routes, the lines through the South Atlantic and Gulf ports made through differential rates less than those charged by the railroads through Chicago and St. Louis by thirty-nine cents per hundred pounds on first-class and

¹ R. Mather, *Annals Ibid.*, p. 112.

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by ten cents on fourth-class goods. The ocean-and-rail lines via Galveston charge the same through rates as do those through Charleston and Savannah.

In the region west of the Colorado common-point territory, rates are determined by adding the local rates to and from the Colorado common points—i. e., the rates between Leadville and Chicago are made by combination on Denver or Pueblo. This system prevails until Salt Lake City and the other Utah common points (Ogden to Spanish Fork, inclusive) are reached. Here rail charges to and from the East have to be made in competition with those by water and rail from New York, via San Francisco, to Utah. Other forces also influence the rates to Utah common points: They must not exceed the rates accorded Montana common points, there being competition between the two common point territories for the trade of the intervening section. Furthermore, the through rates to Utah common points must be less than the sum of the rates to Colorado common points plus the local rates from those cities to the Utah common points, in order to enable both the Colorado and the Utah cities to compete for the trade of the intervening territory. Thus, the rates to Utah common points are subject to so many forces as to make them largely independent of the rates accorded Colorado points. At the present time, the rates to and from the Utah common points exceed the tariffs at the Colorado common points by \$1.05 per hundred pounds, first class, and sixty-eight cents, fifth class. The rates to the Utah common points from Chicago are higher than those from St. Louis and other Mississippi River crossings by the usual differentials.

In Montana the most important cities, Butte, Anaconda, Helena, and Great Falls, are grouped as common points. The distances to them from Chicago and St. Louis are

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practically equal and the rates are the same. In Wyoming and Montana generally the rates are so adjusted as to permit trade to be carried on under equal conditions with Denver and Salt Lake City.

At Santa Fé and Albuquerque, N. M., all-rail rates are fixed in competition with those offered by the rail-and-sea line through Galveston. To and from stations west of Albuquerque, in New Mexico, and eastern Arizona rates on traffic from and for the East are combinations on Albuquerque of local and through tariffs.

The Texas local and interstate rates were explained in the preceding chapter. Throughout the Texas common-point territory, which includes most of the state, the rates to and from Kansas City and St. Louis are the same, while Chicago, Louisville, Cincinnati, Detroit, Cleveland, and Pittsburg have fixed differentials above the St. Louis charges. The Memphis and New Orleans rates to and from Texas common points are equal, and ten cents, first class, under the St. Louis rates.

In the last few years an interesting rate relationship has developed among the larger points in Arkansas and Oklahoma. Little Rock is in strong competition with Memphis. The rates to Memphis are in the main controlled by water competition. In order that Little Rock may do a fair share of business in the territory intermediate between it and Memphis, the rates to Little Rock are below the plane which they would otherwise occupy. Farther west, Fort Smith competes with Little Rock in intermediate territory. As a result the rates to Fort Smith are made differentials higher than those to Little Rock, ten cents on less-than-car-load and seven cents on the car-load classes. Muskogee and McAlester, Oklahoma, points to the westward of Fort Smith, also compete with

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the latter point, and rates to Muskogee and McAlester have been constructed on differentials in varying amounts over Fort Smith. At Oklahoma City, the rates are, for the most part, the mean between the rates from St. Louis to Wichita and those from St. Louis to Texas common points, with the exception that, on account of the competition between Fort Smith and Oklahoma City, the rates to Oklahoma City are, in some instances, made lower than the mean between the St. Louis-Texas and the St. Louis-Wichita rates.

The details presented in this chapter are quite sufficient to indicate the intimate interdependence of railway rates throughout the wide territory from Chicago and St. Louis west to Helena and Salt Lake City and southwest to Texas and Arizona. An adjustment of railway rates has been worked out that permits the entire region to develop simultaneously and harmoniously, and which secures to each of the main trade centers the commerce to which it is entitled by location and natural advantages. With the economic progress of this rapidly growing part of the United States minor readjustments of railway charges are made necessary; and these, for the most part, are made by establishing fixed differentials—a plan of rate making which experience has proven to be in harmony with the economic needs of the region.

REFERENCES

1. R. Mather, "How the States Make Interstate Rates," in *Annals of the American Academy of Political and Social Science*, vol. xxxii, pp. 102-119, July, 1908. (This excellent explanation of the interrelation of railway rates west of Chicago and St. Louis is illustrated by nine sketch maps, five of which, somewhat modified, are reproduced in this chapter.)

2. L. G. McPherson, "Railroad Freight Rates in Relation

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to the Industry and Commerce of the United States," pp. 78-85 and 117-120, New York, 1909.

3. "Changes in Freight Tariffs," Part II of "Railways in the United States in 1902." Published by the Interstate Commerce Commission, Washington, D. C., 1903. (The rate tables in this volume indicate many of the rate differentials referred to in this chapter.)

CHAPTER XXIV

TRANSCONTINENTAL FREIGHT RATES

Competition of water and rail routes between our Atlantic and Pacific seaboards—General effect upon transcontinental rail rates—Main features of transcontinental rate system—Eastern "Rate Groups"—Definitions of terms used in transcontinental tariffs—Class rates, west-bound and east-bound—West-bound commodity rates to North Pacific Coast terminals and intermediate points—West-bound commodity rates to California and points in Nevada and Utah—East-bound commodity tariffs—Rates on fresh fruits and vegetables—East-bound tariffs on lumber and shingles—Criticism of the transcontinental rate system—References.

OCEAN-AND-RAIL AND INTERRAILWAY COMPETITION

BETWEEN the eastern and western seaboards of the United States traffic is handled by actively competing rail and ocean carriers. There are two steamship lines engaged in the trade, the one handling the larger share of the ocean tonnage being the American-Hawaiian Steamship Company, operating by way of the Isthmus of Tehuantepec, and the railroad across that divide. This company began operations in 1900; and, until the beginning of 1907, its vessels went around South America through the Straits of Magellan. Even by that circuitous route, its traffic grew steadily, reaching 115,000 tons in 1906; and after the shorter course by way of the Isthmus of Tehuantepec was adopted business increased more rapidly, the tonnage being about 250,000 for 1909.

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The ocean route via the Isthmus of Panama was actively used after the completion of the Panama Railroad in 1855. At the present time the steamers from New York to Colon and the railway across the Isthmus are obliged to reserve a large share of their capacity for the traffic created by the construction of the canal. The shipments by rail across Panama, in 1908, amounted to 381,258 tons of "through commercial traffic," including traffic in both directions.

Until near the close of the last century, sailing vessels were run regularly between New York and San Francisco, around Cape Horn, but in 1898 the sailing vessels were sold and their former owners started the American-Hawaiian Steamship Line. Consequently, the sailing traffic around the Horn since 1900 has been limited to that carried in chartered vessels, of which a few are dispatched each year.

Railway traffic from seaboard to seaboard has to be taken at rates fixed in competition with water carriers, and, because of the competition of the industries located between the Alleghany Mountains and the Missouri River with those located in the eastern seaboard states, it has been found necessary to make the west-bound rates on most commodities the same from all places east of the Missouri River to all the ports on the Pacific coast of the United States. At one time the Pacific coast states secured most of their manufactured goods and supplies from the section east of the Alleghanies, but with the growth of manufactures in the central West an increasing share of the west-bound trade has originated in and west of the Pittsburg district. At the present time it is estimated that nearly two thirds of the purchases made by the people of the Western States are made in the central West—Pittsburg, Chicago, St. Louis, the Missouri River cities, St. Paul, Minneapolis, and the numerous other centers of trade and industry.

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Being required by water competition to make especially low rates from the Atlantic seaboard to the West, it is natural to suppose that the railways would, in spite of the shorter haul, charge higher rates to the Pacific from Pittsburgh, St. Louis, and other interior cities than from New York, but the adoption of that policy of rate making was prevented by two forces: the necessity of placing the industries of the central West and the East on a parity as regards the western trade, and the insistence of the railways originating at Chicago, St. Louis, and the Missouri River upon rates that would enable the central West to ship goods in large quantities by direct rail lines to the west coast and to the intermediate region tributary thereto. Thus the rivalry of railways and ocean lines at the Atlantic seaboard, of the railways of the West with those of the East, and the industrial competition of the Mississippi Valley with New England and the Middle Atlantic states unite to require the application of common rates on west-bound traffic over a wide area. The major share of the transcontinental tonnage, west-bound, and probably east-bound, is subject to tariffs which blanket all or most of the territory east of the Missouri River.

In the Pacific coast states and in the section within a thousand miles of the Pacific the industrial and trade conditions are unlike those in the eastern third of the United States. In the West the large cities and trade centers are on or near the coast. The cities in the mountain states adjacent to the states along the Pacific cannot become industrial and trade rivals of the seaboard cities. Accordingly, it is not necessary for the transcontinental railways to apply to the intermediate mountain towns the low rates granted to the seaboard terminals to meet the competition of the ocean lines; and in most instances the west-bound

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rates to intermediate towns several hundred miles east of the Pacific coast are higher than the through rates for the longer haul. Likewise, but to a less degree, the rates east-bound are higher from the intermediate towns than from the seaboard terminals.

The practice of making higher rates to intermediate towns has been upheld by the Supreme Court and the Interstate Commerce Commission.¹ The prohibition of a higher charge for an intermediate shorter haul is made absolute in the Mann-Elkins Act of 1910, which, however, allows the commission to permit the carriers, upon application, to maintain a higher charge for the short haul if necessity can be proven.

MAIN FEATURES OF THE TRANSCONTINENTAL RATE SYSTEM

Out of the industrial and transportation conditions here briefly outlined has developed the fourth general system of rate making in the United States—that of the transcontinental railways. The three main features of this rate system as it has been applied to traffic, west-bound and east-bound, are as follows:

1. Blanket or common rates on west-bound transcontinental traffic from most points east of the Missouri River. This is true of both class and commodity tariffs, but, as will appear as the discussion proceeds, there are numerous exceptions made to the general policy of blanketing rates from the territory east of the Missouri. Upon some commodities the rates east-bound from the Pacific coast are the

¹ Consult the decision of the Commission in *Railroad Commission of Nevada vs. Southern Pacific Company et al.* The decision is reprinted in full in Appendix II, Volume II of this book. It contains a concise account of rate-making to and from "intermediate" and "terminal" points in the West.

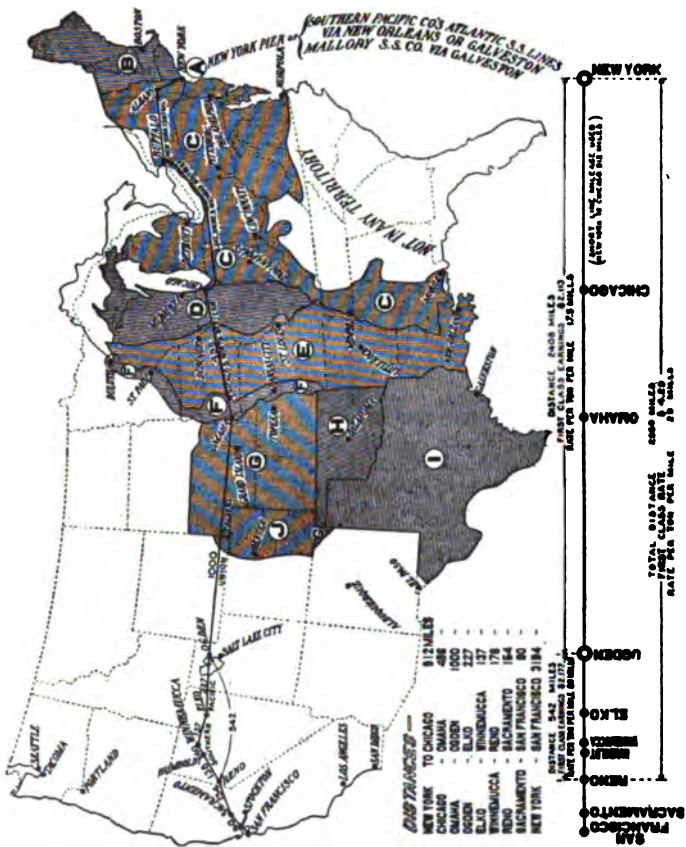
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same to all places east of the Missouri, and on more articles common rates prevail to places east of the Mississippi, but the blanketing of rates is less general upon east-bound than upon west-bound shipments.

2. Upon east-bound traffic, and to a less extent upon that toward the west, graded zone tariffs have been established. The places east of the Rocky Mountains are classified in ten "rate groups," A to J. Upon the higher classes of freight and upon numerous commodities the rates to all groups are the same, but upon the lower classes and upon most commodities the tariffs vary by rate groups. Class rates west-bound are practically identical with those east-bound—i. e., graded for classes below the third; and in west-bound commodity tariffs there are numerous instances of grading by groups; but this grading of commodity tariffs west-bound is an exception to the more general rule of blanketing rates from points on and east of the Missouri River.

3. The rates west-bound to the intermediate points east of the Pacific seaboard terminals are, as a rule, higher than the through tariffs, the higher charges being fixed by the addition to the through rates of either fixed arbitraries or the local rates back from the terminals, as will be explained presently. The rates east-bound from the intermediate points are usually higher than from the terminals, although many intermediate towns are given the same rates as the terminal cities enjoy.

These three main characteristics and other minor features of the transcontinental system of rates can best be made clear by a description of the actual tariffs east and west-bound; but before going further it is necessary to define or delimit the "rate groups" among which the eastern half of the United States has been divided.



RATE GROUPS DESIGNATED IN TRANSCONTINENTAL TARIFFS

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EASTERN "RATE GROUPS," A TO J

The Transcontinental Freight Bureau publishes for its members the east-bound and west-bound tariffs in separate books; and there are two sets of these tariff books—one set for the lines to and from California and another for the roads to and from Oregon and Washington. With minor exceptions, the ten rate groups for the region east of the Rocky Mountains are the same in both sets of tariff books. Both class and commodity rates in each direction are given for each of the ten groups shown on the map.

Group A in the tariff of the lines to and from California includes two piers at New York—that of the Morgan Line, to New Orleans and Galveston, and that of the Mallory Steamship Company to Galveston. In the tariff of the northern transcontinental roads Group A rates apply only to the New York pier of the Morgan Line. These tariffs apply to traffic via Gulf ports.

Group B rates cover all six New England States.

Group C includes the section north of the Potomac and Ohio as far west as Lake Michigan. The cities in the southern peninsula of Michigan (Mackinaw City excepted) and those of Indiana (other than a few in the northwestern part of the state) belong to this group. Group C also comprises such part of the southeastern states¹ as is covered by the groups—i. e., Virginia, West Virginia, and Kentucky (Columbus excepted), and certain cities in Tennessee and Ala-

¹ Points in the southeastern states, south of Virginia, West Virginia and Kentucky, are not included in the ten lettered rate groups. There is a separate "West-Bound Tariff" (No. 6-D, effective March 22, 1910) which will be referred to later, "naming commodity rates from Southeastern Common Points to Pacific Coast Terminals." All the transcontinental lines unite in this commodity tariff from southeastern common points.

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bama and Mississippi. Both of the east-bound tariffs contain a long list of towns and cities in eastern Canada, and the rates to these places are either Group C rates or those plus designated arbitraries.

Group D applies (with the exception of certain towns) to the northern peninsula of Michigan (including Mackinaw City), to most of Wisconsin (the principal exceptions being points located on or near the Mississippi River); to Chicago, Peoria, and other points in Illinois (except a few points located on or adjacent to the Mississippi River); and to a few cities of northwestern Indiana not included in Group C.

Group E includes the points in Wisconsin and Illinois not included in Group D; points in Iowa, Missouri, and Arkansas (with the exception of certain places in the western part of those states); most points in Louisiana; Columbus in Kentucky; and Memphis in Tennessee. Group E also contains some 256 towns in Minnesota, mainly in the southeastern corner of the state.

Group F comprises Allouez, Itasca and Superior, Wis.; Duluth, St. Paul, Minneapolis, Mankato, and numerous other places in Minnesota¹ north of the points included in Group E; western Iowa and western Missouri towns; the main Missouri River towns in Nebraska and Kansas, Winnipeg, and a few other cities in western Canada.

Group G embraces most places in Nebraska and Kansas; the towns of Julesburg and Wier, Col.; and a few small places in New Mexico.

¹ Some Minnesota towns are in Group E, others in Group F, and still others are outside of the lettered rate groups. There are east-bound and west-bound transcontinental tariffs applying solely to and from certain points in Minnesota, and points in Manitoba, North Dakota, and South Dakota. Only four South Dakota towns come within a lettered rate group (G). North Dakota and Manitoba are outside the groups.

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Group H includes all of Oklahoma, and Group I practically the whole of Texas; while Group J applies to eastern Colorado and to Cheyenne and fifteen other places in Wyoming.

These ten lettered rate groups were established January 1, 1909.¹ Prior to that time east-bound rates were graded upward in six successive "territories," beginning with (1) the Missouri River Common Point Territory, and including (2) the Mississippi River Common Points, (3) the Chicago and Common Points, (4) the Cincinnati, Detroit, and Common Points, (5) the Pittsburg, Buffalo, and Common Points, and (6) the New York, Boston, and Common Points territories. It will be noted that these six "territories" did not include the southwestern states nor the region between the Missouri River and the Rocky Mountains.

Prior to 1894 the west-bound rates had to a large extent been graded by territories, but after that year the policy was adopted of blanketing the territory east of the Missouri River as regards most rates. The extent to which class and commodity rates are now blanketed and to what

¹ The following statement regarding the adoption of rate groups is from a letter written to the authors, May 5, 1910, by Mr. R. H. Countiss, Agent of the Transcontinental Freight Bureau: "The present method of publishing rates by Groups was adopted January 1, 1909, in order to conform to the requirements of the Interstate Commerce Commission. It did not, however, materially change the application of the tariff. For example, under the old method of grouping points together by territories Chicago was shown as a point in 'Chicago and Common Points Territory'; under the present arrangement, Chicago is shown as taking 'Group D' rates, and substantially the same points that were formerly included with Chicago in the Chicago and Common Points Territory are now grouped with Chicago in the points taking 'Group D' rates. It is simply a change in the method without any material change in the application of the rates themselves."

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extent graded will be indicated presently by giving tables of actual rates.

DEFINITIONS OF TERMS EMPLOYED IN TRANSCONTINENTAL TARIFFS

As has already been stated, transcontinental rates include both class and commodity tariffs. There are also special commodity tariffs. By far the larger volume of tonnage and, indeed, most articles are carried at commodity tariffs. The lines to California publish class rates only for the through traffic to and from the California terminals, the articles at intermediate points and the major portion of those at the terminals being charged commodity tariffs, and the class tariff applies only when there is no commodity rate. The lines to and from the North Pacific Coast Terminals have class rates for traffic to and from intermediate as well as terminal points—i. e., to the relatively small part of the tonnage that does not move at commodity tariffs.

The classification of freight on the transcontinental roads is governed by the Western Classification, which, as has been explained, applies generally west of Lake Michigan, Chicago, and the Mississippi River, the Official and Western classifications overlapping in Illinois. There is no special classification for transcontinental traffic.

Class rates are "local" and "joint"—terms which require no explanation. Commodity rates are "local," "joint," and "proportional." The proportional rate is the railway company's share of the through rate on export or import traffic.

With reference to the western origin or destination of traffic, there are tariffs to and from (1) California Terminals and North Pacific Coast Terminals, (2) Intermediate Points, and (3) Individual Points, both in the United

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States and Canada. Rates toward the east are (1) to the "rate groups," (2) to places in eastern Canada, and (3) to points in the southeastern section of the United States.

The California and North Pacific Coast "Terminals" include not only all the seaports from San Diego to Vancouver, inclusive, but also numerous places like San José, Stockton, Sacramento, and Marysville, some distance from the seaboard. Most of the "terminals" not on the coast have water communication with the ocean, and these waterways have caused the railways to treat such inland towns as terminals. Indeed, some of them were the first terminals—Sacramento, for instance, from which the Central Pacific Railroad started eastward. During recent years the number of towns classed as "terminals" has been much increased by including the small places near the few large ones that have long been treated as terminals. The east-bound tariff of 1903 names only sixteen Pacific coast terminals in California, while the tariff of 1909 lists ninety-seven terminals. The west-bound tariff of the lines to California has the same terminals as the east-bound tariff. This, however, is not true of the tariffs to and from the North Pacific Coast Terminals; the last west-bound tariff names fifty-eight terminals, while the east-bound tariff applies the terminal rates not only from those fifty-eight stations, but also from about 500 others in the western part of Oregon, Washington, and British Columbia. The tendency is to enlarge the area over which terminal rates apply.

The "intermediate points" are those located on a direct line over which traffic passes to or from any of the "terminals." These points, as well as the terminals, are listed in the tariffs or "circulars" issued by the Transcontinental Freight Bureau; and at both intermediate and terminal points the commodity tariff covers most of the

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traffic, there being class rates only "on shipments for which no commodity rate is named."

In each tariff book there are two short lists of "individual points"—one list of the places in the Pacific coast states and the other of towns east of the Rocky Mountains; and between places in these lists special rates apply as regards one or more particular commodities. The special commodity rates are few in number and apply between designated individual points.

In listing the terminal and intermediate points to which the west-bound and from which the east-bound rates apply the tariff books state opposite the name of each place listed the joint line or lines over which goods may be shipped. A joint line to or from the West is called a "western gateway." The rates to or from each of the larger cities in the West apply by several designated "western gateways." It will be understood that the rates in all the tariffs are for specified gateways.

CLASS RATES, WEST-BOUND AND EAST-BOUND

The principles followed in making transcontinental rates can best be stated by presenting some tables, first of class and later of commodity rates. The following class rates are those in force over the northern transcontinental lines; the class tariffs of the lines to and from California are nearly identical with those of the northern roads, the main difference being that the roads from California do not have "intermediate" class rates. It should be noted that each table of class rates is preceded by the limiting statement that the rates are to apply only "on shipments for which no commodity rate is named" in the tariff book. Moreover, the tables of class rates are headed by a note to the effect that "whenever a car load, or a less than

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car load commodity rate is established it removes the application of the class rates to or from the same points on

CLASS RATES WEST-BOUND

West-Bound Tariff No. 4.-G. Issued January 29, 1910. Naming Rates from Eastern Shipping Points to "North Pacific Coast Terminals" and Points in Oregon and Washington, also to British Columbia Pacific Coast Terminals and Other Points in British Columbia.

TO "NORTH PA- CIFIC COAST TERMINALS" AND POINTS IN ORE- GON AND WASH- INGTON FROM POINTS TAKING	IN CENTS PER 100 POUNDS									
	1st Class	2d Class	3d Class	4th Class	5th Class	Class A	Class B	Class C	Class D	Class E
Group A Rates	300	260	220	190	.....	.....	.....	.....	.....	.....
Group B Rates	300	260	220	190	.....	.....	.....	.....	.....	.....
Group C Rates	300	260	220	190	.....	.....	.....	.....	.....	.....
Group D Rates	300	260	220	190	165	160	125	100	100	95
Group E Rates	300	260	220	190	165	160	125	100	100	95
Group F Rates ¹	300	260	220	190	160	160	125	100	95	85
Group G Rates ¹	300	260	220	190	160	160	125	100	95	85
Group H Rates ¹	300	260	220	190	160	160	125	100	95	85
Group I Rates ¹	300	260	220	190	160	160	125	100	95	85
Group J Rates ¹	300	260	200	175	100	140	120	95	85	80

Minimum Charge.—The minimum charge for any single shipment, whether composed of one or more articles, will be based on one hundred pounds at Second Class rate.

¹ Rates named will apply also to British Columbia Pacific Coast Terminals.

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that commodity." In a word, class rates apply to articles not listed in the commodity tariffs. They also apply more largely to traffic at places classed as terminals than at intermediate points.

The first of these tables, taken from the West-Bound Tariff, shows that there is very little grading of west-bound class rates by "groups." In the upper classes the rates to the North Pacific coast states are the same from all parts of the United States east of the Rocky Mountains, from New England on the east to Colorado, Oklahoma, and Texas on the west. In the two lowest classes there is more variation of rates by groups; but even in those classes, it is in Group F, or in general at the Missouri River, that the first rate reduction is made. As was stated above, west-bound transcontinental rates, class as well as commodity, are, for the most part, blanketed over the eastern half of the country.

CLASS RATES EAST-BOUND

East-Bound Tariff No. 2-G. Issued October 15, 1909. Naming Rates from "North Pacific Coast Terminals" and Points in Oregon, Washington, and Idaho, to Points in the United States and Canada.

"INTERMEDIATE" CLASS RATES

FROM "INTER- MEDIATE POINTS" TO POINTS TAKING	IN CENTS PER 100 POUNDS									
	1st Class	2d Class	3d Class	4th Class	5th Class	Class A	Class B	Class C	Class D	Class E
Group D Rates.....	360	310	260	210	170	170	145	117	109	98
Group E Rates.....	360	305	255	205	170	169½	144½	117	108½	96
Group F Rates.....	300	260	220	190	150	145	125	100	95	85
Group G Rates.....	300	260	220	190	150	145	125	100	95	85

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"TERMINAL" CLASS RATES

N. B.—Shipments for which no through car load commodity rate nor through car load class rate is provided, will be subject to the sum of the local car load rates, unless the through rate for less than car load quantities named herein is lower, in which event the latter will apply.

FROM "NORTH PACIFIC COAST TERMINALS" TO POINTS TAKING	IN CENTS PER 100 POUNDS.									
	1st Class	2d Class	3d Class	4th Class	5th Class	Class A	Class B	Class C	Class D	Class E
Group A Rates	370	330	265	210	.....	.....	.....	.....	.....	.....
Group B Rates	370	330	265	210	.....	.....	.....	.....	.....	.....
Group C Rates	370	330	265	210	.....	.....	.....	.....	.....	.....
Group D Rates	340	300	240	190	170	175	155	120	105	95
Group E Rates	320	280	230	185	165	167	148	115	100	90
Group F Rates	300	260	220	180	160	160	140	110	95	85
Group G Rates	300	260	220	180	160	160	140	110	95	85
Group H Rates	300	260	220	180	160	160	140	110	95	85
Group I Rates	300	260	220	180	160	160	140	110	95	85
Group J Rates	300	260	190	155	130	140	120	95	85	80

Minimum Charge.—The minimum charge for any single shipment, whether composed of one or more articles, will be based on 100 pounds at Second Class rate.

In east-bound class rates, as will be seen in the second and third tables, the general principle prevails of increasing rates from group to group. However, with the exception that lower rates are given to eastern Colorado and Wyoming (Group J) than to points farther east on classes below the second, the first increase in charges is made when Group E is reached, or when the Missouri River has been crossed. The rates rise in all classes in passing to Groups E and D, and to Group C in the first four classes. There is no rise in charges east of Lake Michigan and the eastern boundary of Illinois.

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In cases where no through commodity rate is named in the tariff, articles in the fifth and lettered classes are handled from and to the Groups B and C by adding to the Group D or Group E class rates (which apply from (to) Chicago and Mississippi River points, respectively), the local tariff rates of the eastern roads applying from (to) Group B or Group C points to (from) Chicago or Mississippi River points.

In addition to the class rates applying between the Pacific Coast Terminals and Intermediate Points on the west and the rate groups on the east, there are tariffs of class rates between points in Minnesota, South Dakota, and North Dakota on the east, and the terminals and intermediate points in the Western States. In the case of the lines from California, Nevada, and Utah the rates apply to Winnipeg and a few other places in Manitoba as well as to points in Minnesota, South Dakota, and North Dakota. In other words, as was stated in defining the "groups" of rates, some places in Minnesota and practically all places in the two Dakotas are outside of the ten lettered rate groups, and have their own east-bound and west-bound transcontinental tariffs of both class and of commodity rates.

WEST-BOUND COMMODITY RATES TO NORTH PACIFIC COAST TERMINALS AND INTERMEDIATE POINTS

In discussing west-bound commodity rates it will be necessary to consider separately those to California and those to Oregon, Washington, and British Columbia. It will be best to start with a table of selected, typical rates to the North Pacific Coast Terminals.

This table illustrates the main features of the west-bound commodity tariffs from the rate groups through

TYPICAL WEST-BOUND COMMODITY RATES TO NORTH PACIFIC COAST TERMINALS *Selected from West-Bound Tariff No. 4-G. Issued January 29, 1910*

TO	Rates in Cents per Hundred Pounds											
	From Points Taking											
	Group A	Group B	Group C	Group D	Group E	Group F	Group G	Group H	Group I	Group J		
	Rates	Rates	Rates	Rates	Rates	Rates	Rates	Rates	Rates	Rates		
	LCL	CL	LCL	CL	LCL	CL	LCL	CL	LCL	CL	LCL	CL
"NORTH PACIFIC COAST TERMINALS"	185	135	185	135	185	135	180	130	175	125		
ARTICLES												
(Minimum car load weight 30,000 lbs. except as otherwise stated).	300	300	300	300	300	300	300	300	300	300	300	300
Shovels, Spades, and Scoops, Min. C. L. wt. 24,000 lbs.	100	100	100	100	100	100	100	100	100	100	100	100
Automobiles and parts, Min. C. L. wt. 10,000 lbs.	140	80	140	80	140	80	140	80	140	80	140	80
Beer, Beer Tonic, Malt Extract in glass or stone, packed, or in wood.	125	90	125	90	125	90	125	90	125	90	125	90
Coffee, green, in sacks												
Glass, common window, boxed	220	220	220	220	220	220	220	220	220	220	220	220
Harness and Saddlery, Min. C. L. wt. 20,000 lbs.	160	115	160	115	160	115	160	115	160	115	160	115
Iron and Steel Castings.	175	125	175	125	175	125	170	120	165	115		
Lawn Mowers, boxed or crated, Min. C. L. wt. 24,000 lbs.	125	100	125	100	125	100	125	100	125	100	125	100
Macaroni and Noodles, boxed, Min. C. L. wt. 24,000 lbs.												
Packing House Products, Min. C. L. wt. 26,000 lbs.							165	165	165	165	165	165
Pickles and Table Sauces	150	100	150	100	150	100	150	100	150	100	150	100
Salt, Min. C. L. wt. 40,000 lbs.							60	60	60	60	60	60
Salt, in packages	110	110	110	110	110	110	110	110	110	110	110	110
Soap, in packages, Min. C. L. wt. 40,000 lbs.	130	80	130	80	130	80	130	80	130	80	130	80
Staves and Headings, Min. C. L. wt. 40,000 lbs.	135	85	135	85	135	85	135	85	135	85	135	85
Twine and Cordage	145	95	145	95	145	95	145	95	145	95	145	95

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to the "North Pacific Coast Terminals." Most, though not all, of the articles listed in the brief table have, each common rates from all points east of the Missouri River. Some articles are given both car load and less than car load rates, others only car load, and some only less than car load rates. The articles selected show differences in car load and less than car load rates ranging from twenty-five cents to sixty-five cents per hundred pounds, the more frequent difference being fifty cents per hundred pounds. Incidentally, the table shows something regarding the parts of the country from which the commodities listed are secured, inasmuch as no rate is given upon an article for those groups from which none of that commodity is shipped.

The tariff book from which the "terminal" commodity rates in the above table are taken also contains rates on articles to points in Oregon, Washington, and British Columbia—i. e., "intermediate" commodity rates. The list of articles given commodity rates to the intermediate points is, however, much shorter than the list of articles given commodity rates to the North Pacific Coast Terminals, and the table of "intermediate" commodity rates is preceded by the important notices:

(a) "Except where through commodity rates are named herein, rates to points in Oregon and Washington . . . will be ten cents per 100 pounds on less than car loads, and five cents per 100 pounds on car loads *higher* than the commodity rates named herein to 'North Pacific Coast Terminals.' On shipments for which no commodity rate is named herein to 'North Pacific Coast Terminals,' the *through class* rates . . . to points in Oregon and Washington will apply."

(b) "Except where through commodity rates are named herein, rates to 'British Columbia Pacific Coast

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Terminals' . . . will be five cents per 100 pounds on car loads and less than car loads, *higher* than the class or commodity rates named herein to 'North Pacific Coast Terminals,' except that Group F, G, H, I, and J class rates . . . to 'North Pacific Coast Terminals' will apply . . . to 'British Columbia Pacific Coast Terminals.'"

It will thus be seen that traffic west-bound to the intermediate points in Washington and Oregon is carried either (a) at commodity rates named in the "Tariff"; or (b) in the absence of a named commodity rate, at the through commodity rate to the terminal plus a fixed arbitrary of five or ten cents per 100 pounds for car load and less than car load amounts respectively; or (c) in case there is neither an intermediate nor a terminal commodity rate fixed by the "Tariff," at the through, or terminal class rate—the terminal class rate applying to the intermediate points.

To these general rules there is an exception in the case of the points on the Southern Pacific lines in Oregon and on the Willamette River, south of Oregon City. Certain articles have commodity rates to these places; but most items of traffic are charged rates "made by adding to the Class or Commodity rates applying to Portland" arbitraries varying with the classes of freight and with the distances of the intermediate points from Portland; furthermore, in the absence of a "specific through rate, or specific method of making through rate, to (these) intermediate points on the line of the Southern Pacific," the rate shall be made by adding to the terminal rate to Portland or East Portland the local rate from the terminal to the intermediate point of destination. Finally, west-bound traffic to eighteen designated points in British Columbia take rates equal to those to "North Pacific Coast Terminals"

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plus ten cents and twenty cents per 100 pounds respectively for car load and less than car load shipments; while forty-three "British Columbia Pacific Coast Terminals" take arbitraries of five cents per 100 pounds, above the rates to the Pacific Coast "Terminals" in Washington and Oregon.

WEST-BOUND COMMODITY RATES TO CALIFORNIA AND POINTS IN NEVADA AND UTAH

The west-bound rates to "intermediate" points on the lines to California are in part determined by a different method than is followed in making rates to the intermediate points on the railroads to the "North" Pacific Coast. There are specific commodity rates to designated points in Nevada and Utah; but, as in the case of the intermediate commodity rates on the northern transcontinental lines, the articles upon which these intermediate commodity rates are named are much fewer than the articles that have specific terminal commodity tariffs. The general rule governing charges to intermediate points on the lines to California is that, "When no specific rate is named to an intermediate point shown in Transcontinental Freight Bureau Circular No. 16-F (issue of January 3, 1910) rate to such intermediate point will be made by adding to the rate shown to the point designated herein as 'Terminal' which is nearest destination of shipment, the local rate published for use upon interstate traffic from nearest 'Terminal' point to such destination." As this rule states, the intermediate points are listed in a pamphlet (Circular 16-F), and in the case of articles to which no specific intermediate commodity tariff has been assigned, the rate to the intermediate point is the through rate to the California "terminal" plus the local back from the nearest "terminal" to the

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intermediate point of destination. If the article shipped is one upon which there is neither an intermediate nor a terminal commodity tariff, then the rate is the sum of the terminal class rate plus the local back to the intermediate station.

It is a universal rule in rate making that the shipper is always entitled to the lowest rate applicable under the published tariffs. The joint through rates over two or more connecting lines, for instance, cannot exceed the sum of the local rates over the several roads composing the joint line. Likewise, an intermediate point on a transcontinental railway will not be charged a combination rate made by adding to the through terminal rate a local charge for the distance from a terminal back to the intermediate town when the sum of these two charges exceeds the combination of local rates directly to the point in question. For instance, the rate from Chicago to any place in Nevada cannot be greater than the sum of the rate of the Western Trunk Lines from Chicago to Salt Lake City (Utah Common Point Territory), plus the local charge on from Salt Lake City. The combination of the local rates direct to an intermediate point fixes the maximum above which the sum of the through rate to the Pacific Coast Terminal, plus the local back from the nearest "terminal" may not rise.

Mention has been made of west-bound (and also east-bound) commodity tariffs from points in Minnesota, North Dakota, and South Dakota. Two other important west-bound tariffs require notice—(1) that "naming Commodity Rates from Southeastern Common Points to Pacific Coast Terminals" in California, Oregon, Washington, and to designated points in Oregon and Washington; (2) the tariff from points in eastern Canada.

The first of these tariffs gives the southeastern portion

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of the United States—not included with the lettered rate groups—commodity rates in a long list of articles. The numerous shipping points in the southeastern states, south of Tennessee and the Virginias, are divided into 121 groups; and each of the 121 commodity rates quoted designates the group or groups of cities and towns from which the rate applies. Some articles have a commodity rate from only one group of cities while other articles have the rate from many groups. Coal and coke have "special" commodity rates from appropriate groups of shipping points. Rates to points on the Southern Pacific in Oregon, and on the Willamette River south of Oregon City, are based on the rates to Portland and East Portland, being arbitraries or locals above the through charges to the nearer one of those terminals. Similarly, the rates to designated terminals and other points in British Columbia are arbitraries above the rates to "Pacific Coast Terminals." The distinctive feature of the transcontinental commodity tariff from the southeastern section is the subdivision of the shipping points into a large number of groups, and the application of each rate only to designated groups of towns.

The class and commodity rates from points in eastern Canada to the Pacific Coast terminals of Oregon, Washington, and British Columbia and to points in Oregon and Washington are published in a separate tariff book.¹ Several thousand articles are given commodity rates; other articles are subject to class rates, the Canadian classification governing. Both class and commodity rates vary with, or are fixed according to, six basing points, there being

¹ Transcontinental Freight Bureau. Competitive Local and Joint Tariff No. 6-F, I. C. C. No. 918.

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“ Toronto,” “ Montreal,” “ Sherbrooke or Quebec,” “ Ca-
couna or St. John (N. B.),” “ Mulgrave,” and “ Sydney ”
rates. Traffic shipped from any other place either takes
the rates of one of these basing points, or stated arbitraries
over the “ Montreal ” rates. The rates upon class traffic,
all-rail, are as follows:

TRANSCONTINENTAL ALL-RAIL CLASS RATES FROM POINTS IN EASTERN CANADA

APPLYING TO “ NORTH PA- CIFIC COAST TERMINALS ” POINTS IN OREGON AND WASHINGTON AND BRITISH COLUM- BIA PACIFIC COAST TERMINALS FROM POINTS TAKING	IN CENTS PER 100 POUNDS.									
	1st Class	2d Class	3d Class	4th Class	5th Class	6th Class	7th Class	8th Class	9th Class	10th Class
Toronto Rates.....	320	278	235	203	175	168	133	108	...	103
Montreal Rates.....	320	278	235	203	175	168	133	108	...	103
Sherbrooke or Quebec Rates	330	286	240	208	180	173	138	113	...	108
Cacouna or St. John (N. B.) Rates	330	286	240	208	180	173	138	113	...	108
Mulgrave Rates	334	290	243	211	182	175	140	115	...	110
Sydney Rates	338	293	246	213	184	177	142	117	...	112

For each article upon which there is a commodity tariff,
rates are given from each of the six basing points, some
commodities having car load rates, others less than car load
charges, and some rates on both quantities. During the
season of navigation there are lake-and-rail rates lower
than the all-rail tariffs. Some inland points in British
Columbia, Washington, and Oregon take “ terminal ”

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rates, other of these interior destinations take arbitraries over the "terminal" rates. As usual, points on the Southern Pacific Lines in Oregon and on the Willamette River south of Oregon City take the terminal rates to Portland, plus designated arbitraries (sometimes a local rate) above the charges to Portland.

EAST-BOUND COMMODITY TARIFFS

The east-bound commodity tariffs from Pacific Coast Terminals and from intermediate points to the eastern half of the United States and Canada, are even more complicated and detailed than the west-bound, but an effort will be made to confine this description to the main features.

Each of the east-bound tariff books issued respectively by the lines from California and from the North Pacific Coast Terminals contains two lists of articles upon which there are specific commodity rates; one list of articles has commodity tariffs from "terminals" only, while the other list is of articles having commodity rates applying both from terminals and designated intermediate points. There is no list of articles taking commodity rates from intermediate points and not from terminals. Class rates, as has been explained, apply from the terminals upon traffic having no specific commodity rate, and from intermediate points when the goods being shipped have neither an intermediate nor a terminal commodity rate, except that under the tariff of the lines from California Terminals the class rates do not apply from intermediate points. All rates apply from named terminals and intermediate points via designated "gateways"—i. e., via specified railway lines or joint lines to the East.

Rates from a small number of intermediate points in Oregon and Washington are determined by adding fixed

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arbitraries to the through rates from the "terminals." The determination of intermediate rates by adding these fixed arbitraries is, however, a less important feature of east-bound than of west-bound tariffs. The places in Oregon on the Southern Pacific Lines, and on the Willamette River, south of Oregon City, have outbound as well as inbound rates fixed by adding graded arbitraries (or locals) to Portland rates.

Traffic from an intermediate point on a line from California, when it has not been given a specific commodity rate, is charged a tariff made by adding to the through rate from the terminal the local rate to the nearest terminal from the intermediate point from which the goods are shipped. In other words, on the east-bound as well as the west-bound traffic, the southern transcontinental lines supplement the specific commodity tariffs from intermediate points by charging articles, not covered by the commodity tariffs, a combination of terminal and local rates, while the northern lines supplement the commodity tariffs by adding fixed or graded arbitraries to the terminal rates.

The transcontinental rates from the West to points in eastern Canada are made in accordance with the principles followed in constructing the tariff of rates west-bound from Canadian points. From both California and North Pacific Coast Terminals and from intermediate points the tariffs to eastern Canada are adjusted to eight basing points. There are "Toronto," "Montreal," "Sherbrooke," "Quebec," "Cacouna," "St. John, N. B.," "Mulgrave," and "Sydney" rates. To places taking Toronto, Montreal, or Sherbrooke rates, the tariffs are the same as to Group C in the eastern part of the United States. Points taking Quebec rates have a fixed differential, varying from fourteen cents per 100 pounds on first-

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class freight to five cents on tenth class—the Canadian classification governing—above the rates to Group C; Ca-couna points have differentials ranging from twenty-five cents first class to ten cents tenth class; and St. John, N. B., destinations differentials forty to ten cents, above Group C rates. The charges to Mulgrave are higher than those to St. John, N. B., by differentials ranging by classes of freight from four cents to two cents; and the rates to Sydney exceed those to St. John, N. B., by eight cents first class and four cents tenth class.

The east-bound transcontinental tariffs also contain through commodity rates from Pacific Coast Terminals and intermediate points to somewhat over one hundred cities outside of the rate Groups A to J, in the southeastern states. From the far northwestern states, the commodities given these through rates to southeastern points are canned goods, condensed milk, dried fruits, hops, and canned salmon; while from California, Nevada, and Utah points the commodities are these (less canned milk) with the addition of beans and peas, citrus and deciduous fruits, nuts, and wine. With the exception of hops to four cities, these rates to southeastern points are limited to car load quantities. On some of the articles the rate is the same to nearly all the destinations, but on other commodities—canned salmon, deciduous and dried fruits—the rates usually, though not always, vary with the several places to which the rates apply. The rates are not blanketed over the southeastern section, but are, in general, worked out with reference to individual points.

Upon the transcontinental railroads, as upon American railways generally, live stock has its own schedule of rates and its special billing. There is, however, nothing in these rates or billing that requires discussion.

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There are "special commodity" rates from designated points in the West to enumerated points in the East. The lines from Oregon, Washington, and British Columbia give special commodity rates to a large part of the important traffic in canned fruit and vegetables, and canned and pickled fish. The roads from California handle less traffic than do the northern lines at what are termed "special commodity" tariffs. Neither the northern nor the southern lines include fresh fruit (excepting apples in car loads) under these "special commodity" tariffs; but fruit and lumber are the commodities to which particular attention is given in the east-bound tariffs of the transcontinental roads. Fresh and prepared fruits have their own schedule of rates in the general east-bound tariff books, while the rates on lumber and shingles are so detailed as to be compiled in "special tariff" books published separately from the general tariffs.

In the schedule of rates on fresh fruits and vegetables the rates accorded each product are accompanied by detailed regulations as to size of cars, minimum car load weights, estimated weights of various packages, mixed and straight car loads, dunnage, stopping in transit for cold storage and reshipment. There are also special additional charges for icing in transit. The car load rates on citrus fruits from California "terminals" to points in all rate groups, A to J inclusive, are \$1.15 per 100 pounds; while on deciduous fruits the car load rates are \$1.45 per 100 pounds to groups A, B, and parts of group C; some places in group C have a rate of \$1.35, others of \$1.25; to groups D to J inclusive, the rates are the same for deciduous as citrus fruit, \$1.15 per 100 pounds. Apples shipped from California in straight car loads of 30,000 pounds minimum are given the low rate of \$1 per 100 pounds to all ten groups.

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The rates on fresh fruit from Oregon, Washington, Idaho, and points in British Columbia from which shipments are made over the American transcontinental lines vary not only with reference to the eastern destination, but also with regard to four groups among which the points of origin of the fruit are classified. Group 1 includes the points in Oregon on the Southern Pacific Company's lines and on the Willamette River south of Oregon City; Group 2 the North Pacific Coast "Terminals" and eighty-seven other places near the terminals; Group 3 the places located farther inland in Oregon, Washington, and British Columbia; while Group 4 comprises places still farther east in Oregon, Washington, and Idaho. The fruit and vegetable traffic constitutes such an important item of the east-bound traffic of the transcontinental roads that it will be well to present the table of rates¹ applying from these four western rate groups to the eastern rate groups. Naturally there would be no rates to Group A which includes two steamship piers in New York City.

Special east-bound tariffs on lumber and shingles are worked out for traffic from Oregon, Washington, Idaho, Montana, Alberta, and British Columbia, and also for traffic from California, Nevada, Oregon, and Utah. The rates applying from the northern one of these two sections are published in three separate books, or "Tariffs"; one tariff gives the rates from the Northwest—Oregon, Washington, Idaho, Montana, Alberta, and British Columbia to points in the Rocky Mountain states and in the states west of the first tier of states west of the Mississippi River; another tariff book names rates to points in the states Minnesota,

¹ Slight changes in the rates from and to some points were made by tariff supplement effective May 18, 1910. It is, however, not necessary for our present purpose to note the changes.

RATES FROM OREGON, WASHINGTON, BRITISH COLUMBIA, AND IDAHO ON FRESH FRUITS, MELONS, AND FRESH VEGETABLES *Freight train service, except as otherwise specifically provided.*

Charges for refrigeration and expedited service, extra, according to tariff.

ARTICLES		From	In Cents per 100 Pounds									
			To Points Taking									
			Group B Rates.	Group C. Rates.	Group D Rates.	Group E. Rates.	Group F Rates. (See Note 4 below.)	Group G Rates.	Group H Rates.	Group I Rates.	Group J Rates.	
		Groups 1 and 2.	155	150	125	125	125	125	125	125	125	
		Group 3.	155	150	125	125	125	125	125	125	125	
		Group 4.	155	150	125	125	112½	112½	125	125	112½	
		Group 2.					200	200				
		Group 3.					200	200				
		Group 4.					200	200				
		Groups 1 and 2.	100	100	100	100	100	100	100	100	100	
		Group 3.	100	100	100	100	85	90	100	100	85	
		Group 4.	100	100	100	100	85	90	100	100	85	
		Groups 1 and 2.	120	115	100	100	100	100	100	100	100	
		Group 3.	120	115	100	100	90	90	100	100	90	
		Group 4.	120	115	100	100	85	85	100	100	85	
		Groups 1 and 2.	120	115	100	100	100	100	100	100	100	
		Group 3.	120	115	100	100	90	90	100	100	90	
		Group 4.	120	115	100	100	85	85	100	100	85	
		Group 1.			75	75	70	70	75	75	65	
		Group 2.			75	75	65	65	75	75	60	
		Group 3.			75	75	65	65	75	75	60	
		Group 4.			75	75	65	65	75	75	60	
		Groups 1 and 2.			75	75	75	75	90	90	75	
		Group 3.			75	75	75	75	90	90	75	
		Group 4.			75	75	75	75	90	90	75	

NOTE 1.—Charges to be computed on basis of initial line's weight.

NOTE 2.—Articles enumerated above may be forwarded in mixed car loads at the rate and minimum weight for the article in car taking the highest rate in straight car loads.

NOTE 3.—Rates named on Fresh Fruits will not apply via Oregon Railroad & Navigation Co., Great Northern Ry., nor Northern Pacific Ry. For rates from points on Northern Pacific Ry., see Northern Express Company Tariff No. 6 (I. C. No. 218), supplements thereto and releases thereof.

NOTE 4.—Rates named will not apply to points in Manitoba.

NOTE 5.—Rates named will not apply to passenger train service from Head River, Ont., see Items 18, 19 and 20, pages 75 and 76.

NOTE 6.—No charge will be made for Stoves and Linings in motor car loads shipped from October 1st to May 1st, the maximum allowance in weight therefor to be 1,500 pounds. Stoves and Linings so used will be returned free to original point of shipment.

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Iowa, Missouri, Arkansas, Louisiana, Wisconsin, Illinois, Kentucky, Tennessee, Michigan, and Indiana; while a third tariff applies to places in New England, the Middle Atlantic states, and the two Virginias. The scheme of rate making followed in these tariffs first divides timber products into four groups: Group A, shingles; B, cedar lumber and timber, and other articles made of cedar; C, timbers or poles requiring two or more cars for transportation; and D, lumber, poles, timbers, and other articles of cottonwood, fir, hemlock, larch, pine, and spruce wood.¹ Rates, in the second place, are made to vary according to the origin of the traffic, there being "Coast," "Spokane," "Oregon," "Montana District 1," and "Montana District 2" rates. Thirdly, the rates are adjusted with reference to the destination of the traffic; the two tariffs applying to points in the states west of the Alleghany Mountains name the rates to stations on the lines of each participating carrier in turn, the rates to many consecutive stations often being the same. The tariff applying to destinations in the Eastern States quotes rates to the basing points—Albany, Baltimore, Emporium, New York, Norfolk, Philadelphia, Richmond, Rochester, Syracuse, and Utica.

The special commodity tariff on lumber and shingles from California, Nevada, Oregon, and Utah subdivides the articles into two instead of four commodity groups, and the rates are quoted from the "Coast Group" and the "Truckee Group" of shipping points. As regards destination, charges are quoted to the rate Groups A to J, inclusive, while to stations in eastern Canada, Group C rates

¹ The tariff applying to destinations in New England, the Middle Atlantic states, and the Virginias has two more groups—E, including sash, doors, blinds, and inside finishings in straight or mixed car loads, and, F, various manufactured articles in straight or mixed car loads.

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apply to points taking "Toronto," "Montreal," and "Sherbrooke" rates. The rates to the other basing points in Canada are the regular differentials above Group C rates, as stated above on page 481.

CONCLUSION: CRITICISM OF THE TRANSCONTINENTAL RATE SYSTEM

The somewhat complicated system of rates described in this chapter applies to traffic that is moved exceptionally long distances. Mainly because of the long haul, it has been possible for the transcontinental railways to give less weight than the railroads in the other parts of the country have found to be necessary or desirable to distance in rate making. The policy of blanketing most west-bound rates over the eastern half of the United States and of grading east-bound tariffs, in so far as they are graded, not by distance, but by broad zones, has been to the advantage of eastern manufacturers and west coast producers. Trade has increased and the West as a whole has developed, and is now advancing at a rapid rate.

The principle of charging no more for a short than for a long haul has been considered by the railway companies to be inapplicable in making rates to and from intermediate points; and the railways have in the past been upheld by the Interstate Commerce Commission in their contention that the competition with ocean carriers at the terminals creates traffic conditions at those places so unlike those obtaining at the intermediate points as to exempt the railways from the obligations of the long-and-short-haul clause of the Interstate Commerce Act.

The rapid growth of the local traffic of the mountain states since 1900 is changing the situation. It is doubtful whether the Commission will much longer consider as rea-

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sonable or necessary higher rates to and from the intermediate points than to and from the terminals. The language of the Commission in *Railroad Commission of Nevada vs. Southern Pacific Company et al.* (Appendix II, Volume II of this book) seems to indicate that the Commission will soon, if not immediately, require the railroads to observe the long-and-short-haul clause as it stands in the Mann-Elkins Act of 1910. Should the Commission adopt this policy a general readjustment of transcontinental rates will be necessary.

In times past the transcontinental railways have unquestionably been justified in charging lower rates at terminals than at intermediate points. When the lines to the Pacific were constructed and for some time thereafter there was very little local traffic throughout the wide Rocky Mountain region. The through traffic was then all-important, and had to be given rates that would hold it against ocean competition. The intermediate traffic was light, the cost of service per unit was high, and there was good reason for local rates higher than the through tariffs. During recent years, particularly since 1900, there has been such a development of both the mountain states and of those along the Pacific as to increase greatly the entire tonnage of every road to the Pacific and at the same time to make the traffic at the intermediate towns quite as important as the through business; indeed, on some lines the local freight is the great source of revenue.

Such being the case, it seems certain that the transcontinental lines, whether they are or are not compelled by the Mann-Elkins Act as enforced by the Interstate Commerce Commission, will find it desirable to modify their present rate structure in the direction of a general observance of the long-and-short-haul principle. Indeed, certain changes

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made in rates during recent years have already lessened somewhat the discrimination against local points. Future changes may wisely be in the same direction, even though the opening of the Panama Canal in 1915, or shortly thereafter, will increase the competition of the steamship lines with the railways for the coast-to-coast traffic. The ocean lines will then get much tonnage that the railways would gladly handle; but the railways, deriving their major share of profits from the traffic to and from the intermediate points, will realize it to be a wise policy to keep local rates as low as through rates, or, rather, to keep through tariffs as high as those to and from intermediate points, although that policy will mean a division of the through tonnage with the steamship lines. The greatest prosperity of the transcontinental railways will result from a rate policy calculated to promote the development of the entire western two fifths of the United States.

REFERENCES

1. The chief sources of information are the east-bound and west-bound tariffs issued by the Transcontinental Freight Bureau. The tariff books consulted in writing this chapter were:

(1) East-Bound Tariff No. 3-H, I. C. C. No. 906. Effective December 6, 1909, naming class and commodity rates from "California Terminals" and other points in California, Nevada, and Utah.

(2) West-Bound Tariff No. 1-K, I. C. C. No. 920 of R. H. Countiss, Agent. Effective March 22, 1910, naming class and commodity rates from eastern shipping points to "California Terminals" and points in California, Nevada, and Utah.

(3) East-Bound Tariff No. 2-G, I. C. C. No. 905. Effective December 6, 1909, naming class and commodity rates from North Pacific Coast Terminals and points in Oregon, Washington, and Idaho to points in the United States and Canada.

(4) West-Bound Tariff No. 4-G, I. C. C. No. 919 of R. H.

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Countiss, Agent. Effective March 22, 1910, naming class and commodity rates from eastern shipping points to North Pacific Coast and British Columbia terminals and points in Oregon and Washington.

(5) Tariff No. 5-F, I. C. C. No. 918. Effective April 1, 1910, naming class and commodity rates from points in eastern Canada to North Pacific Coast and British Columbia terminals and points in Oregon and Washington.

(6) West-Bound Tariff No. 6-D, I. C. C. No. 916. Effective March 22, 1910, naming commodity rates from "Southeastern Common Points" to Pacific Coast Terminals in California, Oregon, Washington, and British Columbia and points in Oregon and Washington.

(7) East-Bound Tariff No. 9-C, I. C. C. No. 922. Effective May 18, 1910, naming class and commodity rates from North Pacific Coast Terminals and points in Washington, Oregon, Idaho, and British Columbia to points in Minnesota, North Dakota, and South Dakota.

(8) East-Bound Tariff No. 7-C, I. C. C. No. 921. Effective April 18, 1910, naming class and commodity rates from points in California, Nevada, and Utah to points in Minnesota, North Dakota, South Dakota, and Manitoba.

(9) West-Bound Tariff No. 8-C, I. C. C. No. 910. Effective December 18, 1909, naming class and commodity rates from Minnesota, North Dakota, and South Dakota to North Pacific Coast and British Columbia terminals and points in Oregon and Washington.

(10) West-Bound Tariff No. 11-B, I. C. C. No. 898. Effective July 5, 1909, naming class and commodity rates from points in Minnesota, North Dakota, and South Dakota to points in California, Nevada, and Utah.

(11) East-Bound and West-Bound Tariff No. 10-B. Effective July 5, 1909, naming joint class and commodity rates between points in Minnesota, North Dakota, South Dakota, and Manitoba and San Francisco and Oakland, Cal., in connection with Pacific Coast Steamship Company.

(12) Joint Proportional Tariff No. S. R. 1001, I. C. C. No. 914. Effective December 29, 1909, naming class and commodity rates from points in the United States to Vancouver, Brit-

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ish Columbia, and through rates via Vancouver to Australasia.

(13) Joint Proportional Tariff No. S. R. 1003, I. C. C. No. 923. Effective April 22, 1910, naming class and commodity rates to Vancouver, British Columbia, and through rates via Vancouver to Japan, China, and Manila.

(14) East-Bound Proportional Tariff No. S. R. 997, I. C. C. No. 908. Effective November 25, 1909, naming proportional commodity rates from Vancouver, British Columbia, Seattle, Tacoma, Albina, East Portland, Portland, San Francisco, and East San Pedro, Cal., on shipments from Asiatic points, Philippine Islands, and Australasia to points in the United States and Canada.

(15) East-Bound Special Tariffs on Lumber and Shingles, No. S. R. 999, I. C. C. No. 911; No. S. R. 1000, I. C. C. No. 912. Effective March 1, 1910. No. S. R. 1004, I. C. C. No. 924. Effective June 1, 1910, naming rates from points in Oregon, Washington, Idaho, Montana, Alberta, and British Columbia.

(16) East-Bound Special Tariff on Lumber and Shingles, No. S. R. 998, I. C. C. No. 909. Effective December 30, 1909, naming rates from points in California, Nevada, Oregon, and Utah to points in the United States and Canada.

2. Numerous decisions of the Interstate Commerce Commission are especially instructive: *Business Men's League of St. Louis vs. Atchison, Topeka & Santa Fé Railway Co.*, IX I. C. C. Reps., pp. 318-372, 1902; also in Ripley's "Railway Problems," pp. 405-440. *City of Spokane, Wash., et al., vs. Northern Pacific Railway Co. et al.*, XV I. C. C. Reps., 376-426; XVI I. C. C. Reps., 179-181; XIX I. C. C. Reps., 162-217; Commercial Club, Traffic Bureau of Salt Lake City, Utah *vs. Atchison, Topeka & Santa Fé Railway et al.*, *ibid.*, 218-237; Railroad Commission of Nevada *vs. Southern Pacific Co. et al.*, *ibid.*, 238-256.

3. L. G. McPherson, "Railroad Freight Rates," pp. 102-113, New York, 1909.

CHAPTER XXV

IMPORT AND EXPORT RATES

Five reasons for special rates upon imports and exports—Import rates via Atlantic ports—Table comparing typical domestic and import rates—Tonnage of imports as compared with domestic freight from ports—"Seaboard differentials" on imports through Boston, New York, Philadelphia, and Baltimore—Export rates via Atlantic ports—Table of export and corresponding domestic rates over Pennsylvania Railroad—West Coast exports and imports via Atlantic ports—Export tariffs via Gulf ports—Import tariffs via Gulf ports—Import and export tariffs via Pacific ports—Conclusion—References.

RAILWAY rates from the seaboard to interior points of destination within the United States are less on many commodities imported from abroad than upon like articles of domestic production. Similarly, the rates from the interior of the United States to the seaboard are less on several commodities when shipped for export to a foreign country than when intended for the domestic market. The articles that have export tariffs lower than the domestic rates are relatively few, compared with those that have import rates lower than the rates on like goods of domestic origin, and only a part of the imports have special rates different from the tariffs on American products; but the import and export tariffs constitute an important and interesting part of the general system of freight rates upon the railways in the United States.

Railway rates are always the resultant of economic

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forces, and are largely controlled by competition among producers and among carriers; hence the explanation for the policy of granting lower rail rates to and from the seaboard upon a large share of our exports and imports than are charged upon like articles sold and produced within the country is to be found in the fact that international trade is subject to more intense and widespread competition than domestic trade is. A brief analysis of the competitive factors affecting import and export traffic will indicate the reasons why the railways have given much of that traffic different tariffs than have been accorded domestic business. It will be well to speak first of the conditions affecting import and export traffic generally, and to refer later, in connection with actual rates, to other more special causes of the lower tariffs accorded articles of foreign, as compared with domestic, trade.

GENERAL REASONS ACCOUNTING FOR THE SPECIAL RATES GRANTED SOME IMPORTS AND EXPORTS

The general reasons for a special rate-making policy as regards import and export traffic are:

1. Most traffic handled in our trade with foreign countries has the choice of several through and highly competitive routes. In some cases the competition is among ocean carriers only; oftener the rivalry of the railways which unite with ocean lines to form through routes to and from the interior of the United States intensifies the struggle among through routes for the coveted tonnage. Imports from Europe to Chicago, St. Louis, or St. Paul, for instance, may enter via Montreal and be shipped thence either by all-rail routes or by some one of the several rail-and-lake lines. Commodities from Europe may also be imported via any of the Atlantic seaports from Portland to Norfolk,

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and be forwarded on by any one of the many all-rail, ocean-and-rail, or lake-and-rail routes; or the port of entry may be Charleston, Savannah, Mobile, New Orleans, or Galveston, the goods being dispatched thence by rail to destination.

Likewise, European goods may reach California via Montreal and over the Canadian railways to the Pacific coast of Canada, from whence they may be shipped southward by rail or coastwise. Goods from Europe destined to our west coast may also take any one of the following routes: via Pacific port, and thence by rail or coastwise; via the Atlantic seaports of the United States and across the country by any one of the many possible routes; via the Gulf ports and on by rail; via New York and the Isthmus of Tehuantepec; via New York and Panama or a direct route from Europe to the Isthmus of Panama; via steamships through the Straits of Magellan or by sailing vessels around Cape Horn. The mere enumeration of these routes shows that import and export traffic is subject to exceptionally keen competition.

2. The low rates on the ocean due to interline and inter-vessel competition tend to keep down the through rates on all imports and exports—those to and from interior cities as well as to and from the seaboard. The rivalry of the railways with each other and with the rail-and-water routes within the United States for these commodities is scarcely less keen than that among the ocean carriers. The traffic solicitors of the railways and inland waterways are constantly striving to secure each for his own line or route as much as possible of the tonnage shipped out of the country or received from abroad; and the carriers are scarcely less desirous than the producers or traders to make possible the growth of the volume of foreign trade. Thus the rates on

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the imports and exports are made lower than on like domestic goods when the carriers consider lower rates to be necessary to secure or to develop the traffic due to external trade.

3. The trade competition of rival seaports brings strong pressure to bear upon the railways to favor the export and import traffic with reduced rates. The recurring controversy among the North Atlantic seaports over the "differentials," and particularly the fight of 1909 and 1910 concerning the rates on imports via these several ports, indicates the strength and persistence of this trade competition. Then there is the rivalry of the Gulf ports with those on the Atlantic for the foreign trade of the great central West and, likewise, the competition of the Atlantic and Pacific gateways for the trade of the central and eastern sections of the United States to and from the Orient.

4. Moreover, as was explained in discussing the competitive factors affecting rates, each railroad is subject to the forces of interregional industrial competition. The carriers are linked with the producers, whose industries they serve, in getting goods in large and increasing volume upon profitable markets. Imports and exports are bought and sold in world markets subject to the widest competition; and for this reason American railways may find it to their advantage to assist American producers with low rates on the materials needed from abroad and on the goods exported to foreign markets.

5. The interdependence of the carriers and the traders at the seaports and of the railways and the industries they serve explains why lower railway rates on imports have frequently been granted to lessen the tariff restriction upon foreign trade. American producers whose chief interest is

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in the domestic market—and they constitute the majority—are protected against foreign competition in the home market both by the cost of transportation and by the customs duties which the foreigner must pay to enter the American trade. The greater importance to American producers of the domestic, as compared with the foreign, market causes most manufacturers and other producers in the United States to object to lower rail rates on imports than on like goods of domestic origin; but there are some American industries, some producers, and many traders in certain sections of the country that have much to gain by lowering the cost of imported commodities. Thus one reason why the railroads grant lower rates on certain imports, particularly raw materials, is to meet the needs of this minority of American producers and traders, and in part to mitigate the effect of tariff duties. However, the number of commodities granted lower import than domestic rail rates, though greater than the number of exported articles thus favored, is relatively small.

The policy of American railways as regards rates on imports and exports can best be explained by discussing in turn concretely the rates on imports and exports of the central West via Atlantic ports, on the imports and exports of that section and the West through the Gulf ports, and the import and export traffic handled through the Pacific ports. The subject, as a whole, is so large and so complex that it will be necessary to confine the presentation to the main features of the system of import and export rate making, without attempting to go much into detail concerning actual rates. It will be helpful, however, to base the discussion upon a few brief tables and citations of typical rates.

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IMPORT RATES VIA ATLANTIC PORTS

Most railroads serving the North Atlantic ports limit special import rates to certain designated commodities and make no difference in the import and domestic rates on traffic included within the classification; this, however, is not true of the roads from Boston, which have lower class rates on some imports than on like goods of domestic origin.

In 1905 the New York Central had special import rates on eighty-eight commodities; and, as Vice President Nathan Guilford then stated to the Elkins Committee, "the regular established tariff rates which are charged on domestic traffic are applied by this company to import traffic, except as to the (eighty-eight) commodities. . . . On these commodities the reduced proportional rates apply when the carriage is continuous, which means when the shipments are delivered direct from the ship's side or appraiser's warehouse to the railroad cars within ten days after the arrival of the vessel."¹

In 1910 the New York Central's "import tariff" listed fifty-one commodities upon which rates were quoted to each of the percentage groups in Central Freight Association territory. It has no import class rates.

The Pennsylvania Railroad Company's "joint freight tariff of import proportional commodity rates," effective May 10, 1910, includes a list of fifty-two articles, which are grouped under thirty-five heads, in the table of rates. Other imports, whether coming under the commodity tariff or under the classification, are handled at domestic rates, and all imports destined to points east of Pittsburg are

¹ Digest of Hearings Before The Committee on Interstate Commerce, Senate of the United States. Sen. Doc., 59 Cong., 1 Sess., No. 244, p. 620, Washington, 1906.

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charged the regular domestic rates. The reduced import rates apply only to the designated commodities when shipped to points in the Central Freight Association territory—Pittsburg to the Mississippi River. These import commodity rates over the Pennsylvania Railroad apply from New York, Philadelphia, and Baltimore, and points basing on those cities. The extent of the reduction made from the domestic tariffs in the case of the thirty-five import rates is indicated by the table on the opposite page, which compares seven of the thirty-five import rates with the corresponding domestic rates from the Pennsylvania's seaboard terminals to Chicago.

It will be noted that the rates from Philadelphia, both domestic and import, are two cents, and from Baltimore three cents lower than those from New York. These seaboard "differentials" of two cents for Philadelphia and three cents for Baltimore under New York apply on commodity traffic and also on Classes 3, 4, 5, and 6. These differentials on first and second classes are eight and six cents. Boston is supposed to have the same rates as New York on standard lines and lower rates on longer "differential" lines.¹

The table gives rates only to Chicago. It will be re-

¹ During 1909 and 1910 Boston commercial interests, led by the Boston & Maine Railroad, demanded the same rates to the West on imports as prevailed from Baltimore. Philadelphia trade bodies objected to this and sought to prevent Boston from having as low a rate as either Philadelphia or Baltimore, while Philadelphia, at the same time, insisted that its rates to the West should be the same as those from Baltimore. The merchants of Baltimore objected to Philadelphia's receiving as low rates as Baltimore, and insisted upon the maintenance of the old differentials. The Pennsylvania Railroad and the Baltimore & Ohio supported Baltimore's demand for the differential under Philadelphia and supported Philadelphia's contention that the rates from Boston should be higher than from Philadelphia. The Pennsylvania and other

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COMPARISON OF TYPICAL DOMESTIC AND IMPORT RATES IN CENTS
PER 100 LBS.

(Effective May 10, 1910, Pennsylvania Railroad) from New York,
Philadelphia, and Baltimore, and Points Basing
on those Cities to Chicago

COMMODITIES	From New York (New York, Brooklyn, Communipaw, Jersey City, and South Amboy)		From Philadelphia (Philadelphia, Chester, and Wilmington)		From Baltimore (Baltimore and Sparrow's Point)	
	Domestic	Import	Domestic	Import	Domestic	Import
Crockery and Earthenware— Min. C. L., wgt. 24,000 lbs. . . .	30	25	28	23	27	22
Fuller's Earth— Min. C. L. 40,000 lbs.	22	14	20	12	19	11
Kaolin—Min. C. L. 40,000 lbs. .	20	14	18	12	17	11
Hemp—Min. C. L. 20,000 lbs. }	30	21	28	19	27	18
Sisal " " 20,000 " }						
Manila " " 30,000 " }						
Hides, green salted, Beef, Calf, or Horse—Min. C. L. 36,000 lbs.	30	25	28	23	27	22
Bar Iron—Min. C. L. 36,000 lbs.	30	21	28	19	27	18
Wood Pulp— Min. C. L. 36,000 lbs.	25	25	23	23	22	22
Min. C. L. 50,000 " . . . . .	..	18½	..	16½	..	15½

railroads south of those serving Boston were in favor of maintaining the old system of differentials. The various contestants being unable to agree, they requested the Interstate Commerce Commission to arbitrate the question. May 10, 1910, the Commission made a temporary decision, pending an investigation and final ruling at a later date, that the import rates should be the same from all three cities—Boston, Philadelphia, and Baltimore; and should be the rates then prevailing from Baltimore and Boston. This was the situation at the time this chapter was being written.

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called that the trunk line system of tariffs between the East and the Central Freight Association territory makes the New York-Chicago rate the base, and that other places than Chicago in the Central Freight Association territory have rates that are fixed percentages, from 60 to 125 per cent, of the New York-Chicago base, Pittsburg, for instance, being in 60 per cent territory, Indianapolis in 93 per cent, Peoria in 110 per cent, and East St. Louis in 117 per cent territories. The commodity import tariffs to the central West, however, correspond but roughly to the percentage rates on domestic traffic. The "tables of rates" from which the import tariffs in the above table are taken give the charges to each of the forty-seven percentage territories in the Central Freight Association territory, but in the case of most commodities the same import rate applies over a number of percentage territories. In the case of fuller's earth the same rate applies at Pittsburg as at Chicago; but this is not typical of a majority of the commodities, there being ordinarily an increase in the rates every few percentage zones from Pittsburg to the Mississippi River.

The tonnage of traffic handled at import rates is relatively small. During the first six months of 1905 the tonnage carried by the Pennsylvania Railroad from its seaboard termini to Pittsburg and points west on its import tariffs was 13.1 per cent of the tonnage of the domestic commodities shipped from the seaboard to the "western points." The imports carried by the New York Central at reduced rates during the first eight months of 1905 amounted to only 2.9 per cent of its aggregate tonnage from New York.¹

The import tonnage, while only a small share of the total

¹ Digest of Hearings Before Committee on Interstate Commerce, pp. 620 and 628, Sen. Doc., 59 Cong., 1 Sess., No. 244.

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freight of American railways, is large in the aggregate; but it is divided among a large number of carriers, and probably—although the facts are not known—the larger share of the traffic is shipped at domestic rates.

Some of the imports from Europe destined to our Pacific coast states enter through the North Atlantic seaports and cross the continent. The tariffs of both the northern and southern transcontinental lines favor imports by these gateways by stipulating that the rates on domestic traffic from points taking Group C rates (which apply west of New England and the middle Atlantic seaboard as far as Lake Michigan and the Indiana-Illinois boundary) shall "apply from Atlantic ports of entry (i. e., Montreal, Quebec, Que.; St. John, West St. John, N. B.; Portland, Me.; Boston, Mass.; New York, N. Y.; Philadelphia, Pa.; Baltimore, Md.; and Newport News, Va.) on shipments originating in Europe (or beyond) destined to " Pacific coast terminals (or beyond). The volume of this traffic is not large, most European goods reaching our west coast by the more economic routes via New Orleans and Galveston, across the Isthmus, or around South America.

The lines from New York, Philadelphia, Baltimore, and Norfolk have no import class rates different from domestic tariffs. At Boston, however, it has been otherwise for several years. The *domestic* class rates in cents per hundred pounds from Boston to Chicago via "standard" or direct lines and via "differential" lines through Montreal are:

CLASSES	1	2	3	4	5	6
Standard Lines	75	65	50	35	30	25
Differential Lines via Canadian routes	70	61	47	33	28	23½

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The relation of import class rates to domestic class rates that has prevailed at Boston for a number of years was clearly explained in 1905 by the then First Vice President of the New York, New Haven & Hartford Railroad, who stated in a communication ¹ to the Elkins Committee:

“ Import traffic comes to us under two heads—viz.: first, that which reaches Boston on a bill of lading from some foreign port to Boston, which bill of lading does not provide a through rate to any point west of Boston; second, that which comes under through bills of lading from foreign ports to final destination in this country.

“ On the first class of this traffic—viz., that which is not covered by through bill of lading when delivered to us—Canadian route rates are charged when the traffic is forwarded from Boston. . . . On all import traffic passing through Boston to the West all roads, including this company, use the Canadian route rates given above, as a maximum, when landed at their respective docks.

“ On the second class named—viz., that which is covered by through bills of lading—the inland proportion charged from Boston to western points is, as a rule, based in the domestic rates from Baltimore ² to Chicago and other Western points. Those rates are to Chicago:

CLASSES	1	2	3	4	5	6
Cents per cwt.	67	57	47	32	27	22

“ The Baltimore basis of rates is also used by Canadian lines from Halifax, St. John, N. B., and Montreal on traffic

¹ Digest of Hearings Before the Committee on Interstate Commerce, p. 623. Sen. Doc., 59 Cong., 1 Sess., No. 244.

² The statement made at the same time to the Elkins Committee by the Second Vice President of the Boston & Maine makes no reference

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from foreign countries landed by vessels at those ports destined to Chicago and other western points in the United States."

Subsequent to 1905 the trunk lines brought about the establishment of import class rates from Boston equal to the domestic rates from New York, but at the beginning of 1909 the Boston & Maine Railroad again put in force import rates equal to the domestic class rates from Baltimore, whereupon followed the controversy above referred to among the railways from the North Atlantic ports and among the commercial interests of those cities—a controversy that the contestants finally requested the Interstate Commerce Commission to arbitrate.

On domestic goods the west-bound class rates from Norfolk, Newport News, and Richmond are lower than those from Baltimore, and import class traffic takes Baltimore rates to points under 90%, and the lower domestic rates to 90% points and higher.

In general, it may be said of import traffic that the tendency during the last two decades has been to limit the rate concessions formerly granted that traffic, as compared with domestic shipments. Until after 1890 it was rather customary for railways to take a percentage of fluctuating through import rates from Europe to inland points within

to the application of Baltimore rates on imports shipped via Boston on through bills of lading. "The Boston & Maine Railroad import class rates . . . are exactly the same as the published rates governing domestic shipments from New England points to the West via the differential routes." The apparent discrepancy in the statements of the officials of the New Haven and the Boston & Maine may possibly be explained by assuming that the Vice President of Boston & Maine referred only to import traffic reshipped and rebilled from Boston, and that his statement does not cover imports passing through Boston on through bills of lading. It is not probable that the import rates of the Boston & Maine were different from those of the New Haven.

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the United States, and in some instances these through import rates were actually less than the rates on similar goods of domestic origin for the railway haul from the seaboard cities to the central West. Such discriminations against the domestic traffic are no longer made; and since the passage of the Hepburn Act of 1906 American railways have been obliged to publish and file their rates on imports and exports, as well as on domestic traffic. This, of course, does not permit railway rates to be a percentage of competitive through charges from foreign countries. Moreover, as the domestic traffic of American railways has grown so as to tax the capacity of their lines, there has been less incentive to bid for the export or import tonnage by offering exceptionally low rates. This general fact applies with most force to the export business, there being railways, particularly those of the Gulf, still having heavier tonnage toward the seaboard than in the opposite direction. Such railways welcome import traffic for the "back load." The greatest efforts to secure import traffic are made, as we shall presently see, by the transcontinental lines, that endeavor to have as large a share as possible of the goods from Europe for the western part of the United States enter the country by way of New Orleans and Galveston.

EXPORT RATES VIA ATLANTIC PORTS

The rates to New York, Philadelphia, and Baltimore from the central West on classified traffic are the same for export as for domestic business; but, in the case of Boston, Portland, and Montreal, class rates on exports are lower than on domestic consignments. Reduced export rates, whether on class or commodity traffic, apply only from points west of the trunk line territory. On class traffic for export Boston has the New York rates, which are lower

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than the domestic rates to Boston by seven cents on first class and two cents on sixth class. Portland gets the Boston export class rates on shipments via the Canadian Pacific and the Grand Trunk Railway. The export class rates to Halifax are the New York rates plus one cent per hundred pounds, while to Montreal the export class rates are two cents a hundred pounds under the domestic rates, which are the same to Montreal as to New York.

On export traffic having commodity tariffs, the New York rates apply to Boston and Quebec, also to Portland under certain restrictions. The export rates to Halifax and St. John, N. B., are one cent a hundred pounds above the New York rates. The export commodity rates to Montreal are the rates (domestic) to Philadelphia, and thus lower than those to New York by the regular differentials. The number of exported commodities favored with reduced tariffs is less than the number of imported articles thus aided. It is possible, for instance, to include in a single small table all the export commodity rates¹ in force over the Pennsylvania Railroad and to compare those tariffs with the rates on the same articles when shipped to the Atlantic seaboard for domestic use. These export rates apply in part from Chicago and points in the vicinity thereof, and in part from Mississippi crossings and from Central Freight Association territory generally, with variations in charges from different points corresponding roughly to the rate groups in that territory. The rates in the tables are those from Chicago and common points only :

¹ Two export rates which do not apply from Chicago are omitted from the table—on palm oil refuse from six towns in Ohio and Pennsylvania, and on dross (lead, spelter, tin and zinc dross) from 66½ and 71 per cent territories which are in northwestern Pennsylvania and eastern Ohio.

EXPORT RATES IN CENTS PER 100 LBS., AND CORRESPONDING DOMESTIC RATES EFFECTIVE OVER THE PENNSYLVANIA RAILROAD, MARCH 15, 1910, FROM CHICAGO AND 100 PER CENT TERRITORY TO NORTH ATLANTIC SEAPORTS.

	FROM CHICAGO TO									
	Boston. Portland		New York.		Philadelphia.		Baltimore.		Norfolk. Richmond.	
	Domestic	Export	Domestic	Export	Domestic	Export	Domestic	Export	Domestic	Export
Agricultural Implements—Min. C. L. 30,000 lbs.....	33	25	30	25	28	23	27	22	27	22
Grain—Min. C. L. for export grain ordinarily 90 per cent car capacity.....	22	17½	20	17½	18	16½	17	16	17	16
Grain—Reshipping rates from Chicago and common points.....	18	13	16	13	14	12	13	11½	13	11½
Grain Products, in general. Reshipping rates from Chicago and common points.....	22½	19½	20½	19½	18½	17½	17½	16½	17½	16½
Grain Products—Brewers' dried grain, corn oil cake, corn oil meal, cotton seed oil cake, Distillers' dried grain, Gluten and gluten feed, gluten meal, Linseed oil cake, linseed oil meal, and mixed live stock feed.....	18.7	15	16.7	15	14.7	13	13.7	12	13.7	12
Grain Products—Brewers' dried grain, Distillers' dried grain, Gluten and gluten feed, Gluten meal and mixed live stock feed.....	19½	.....	17½	.....	15½	.....	14½	.....	14½	.....
Grain Products—Corn oil cake and meal, cotton seed oil, Linseed oil cake and meal.....	.....	16	.....	16	.....	14	.....	13	.....	13
Starch.....	.....	15	.....	15	.....	13	.....	12	.....	12
Flour, export only.....	19½	16	17½	16	15½	14	14½	13	14½	13
Flour, export only—Reshipping rates.....	.....	18½	.....	18½	.....	17½	.....	16½	.....	16½
Corn Syrup and Glucose—in bbls. or tank cars C. L. 30,000 lbs.	.....	14	.....	14	.....	13	.....	12	.....	12
Corn Syrup and Glucose—in bbls. or tank cars C. L. 40,000 lbs. or tank capacity.....	27	.....	25	.....	23	.....	22	.....	22	.....
Corn Sugar and Grape Sugar—in bbls. or bags Min. C. L. domestic 30,000 lbs., export 56,000 lbs.....	.....	22½	.....	22½	.....	20½	.....	19½	.....	19½
Pig Iron, Furnace Salamander, per ton of 2,240 lbs. Ingot molds per ton of 2,000 lbs.....	27	22½	25	22½	23	20½	22	19½	22	19½
Iron and Steel Rails, new, and cross ties per ton of 2,240 lbs.....	515	320	475	320	435	280	415	260	415	260
	510	315	470	315	430	275	430	275	430	275

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Such are the commodity export rates prevailing over the Pennsylvania Railroad. The export tariffs of another trunk line or of a New England road would differ only in detail. The New York Central Lines West, for instance, have practically the same list of commodities to which export rates are given. It will be seen that the articles named in the tables are limited, with minor exceptions, to agricultural implements, grain and grain products, pig iron, and steel rails. All rates in the table are for car-load quantities, the minimum car-load weights being stated for some of the articles in the list. For the other commodities the minimum car-load quantities are fixed by general and special rules that are omitted in order not to make the table too complex.

The east-bound commodity tariff "differentials," or the relative rates to the North Atlantic seaports, are indicated by the rates given in the table. On domestic traffic the rates to Boston and Portland are two cents above those to New York, except in the case of agricultural implements, which is fifth-class, not commodity, traffic. For export traffic the rates to Boston and Portland are the same as those to New York. Norfolk and Richmond take Baltimore rates, both on domestic and export traffic.

The tariff book from which the table is compiled stipulates that "shipments will be waybilled at the authorized inland export rates only when a through foreign bill of lading to a foreign port is issued showing the through rate, and the shipment is consigned to a foreign port in care of a railroad company's foreign freight agent at the Atlantic seaboard port of export." If goods shipped to the seaboard at domestic rates are exported, "the inland charges will be corrected to basis of rates applying on export shipments."

The practice of granting reduced export rates to Atlan-

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tic ports on grain and grain products became general early in 1889. Prior to that date export rates were made less than those on domestic shipments for short periods, Minneapolis being the first point from which a temporary reduction in export grain and flour rates was made. This was at the close of 1889. Export corn from Chicago and the Mississippi was given a special rate during October, 1896, and also for a part of 1897. Then, in 1899, the policy of favoring exported wheat and corn and grain products was adopted. These reduced rates were established by the lines to the Atlantic primarily to meet the competition of the newly established roads to the Gulf ports. The export rates on corn were lower than the domestic charges from Kansas City to Galveston from and after April 28, 1890; oats were similarly favored in 1891 and wheat in 1896. Since that date the railroads to the North Atlantic ports have had to share with the lines to New Orleans, and particularly to Galveston, the export traffic in agricultural products from the Missouri Valley. The rapidly developing Southwest is mainly served by the roads to the Gulf.

While most of the exports from the west coast of the United States to Europe and the West Indies are shipped by water around South America or by way of Tehuantepec or the Isthmus of Panama, the transeontinental railways secure some of the traffic for export by way of the Atlantic and Gulf ports. To aid them in their competition with the steamships, the transcontinental railways offer especially low car-load "proportional commodity rates." The northern lines offer these proportional rates on dried fruit, fish oil, canned goods, and oleo for shipment in car loads via Canadian or American Atlantic ports to Europe or the West Indies. These northern lines from the Pacific have little chance to engage in export traffic to the West Indies

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via the Gulf ports; but they offer a low rate on condensed milk destined for Cuba or Porto Rico by way of New Orleans or Galveston.

The transcontinental roads from California offer proportional rates on a large list of commodities when exported to Europe, the West Indies, or Central America. The car-load rates from the California " terminals " to Europe via the Gulf and the Atlantic ports of the United States and Canada include apricot and peach kernels, canned goods, dried fruits, honey, wine in barrels or casks, fish oil, oleo oil, and oranges. Especially low rates are given on oleo oil, tallow, and hog and beef casings from California seaports to Gulf ports for export to Europe. Borate rock from California to the Gulf for export to Europe also enjoys a special rate. Exports from California to the West Indies, Mexico, Central and South America by way of New Orleans, Galveston, Port Bolivar, and Texas City are handled by favorable routes, and the commodities given low car load and less than car load export rates include the California products for which there is a demand in tropical America—wines, liquors, condensed milk, dried, salted, and pickled fish, and canned goods.

Our west coast states secure a relatively large share of their imports via the Gulf ports. The rates on this traffic will be considered in the discussion of the rates upon Gulf import and export traffic.

The competition of the North Atlantic trunk lines with each other, the rivalry of the American and Canadian railroads, and the competition of both American and Canadian railways with the water route to Montreal are also causes for granting reduced rates on the export traffic in staple agricultural products. During recent years, however, inter-railway competition has been brought under more ef-

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fective regulation, and the tonnage of exports has become a much smaller share of the total traffic of American railways; thus, while the present practice of granting reduced rates to certain exports will probably be continued, it is not to be expected that this policy will be more widely applied in rate making.

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Reference has just been made both to the success of the Gulf railroads in building up a traffic in the exports from the agricultural trans-Mississippi section of the country, and also to the fact that the railways to the North Atlantic began between 1890 and 1900 to grant reduced rates on grain and grain products, because that rate policy had previously been adopted by lines to the Gulf. As regards imports, the Gulf cities and the railroads serving them have not been so successful. The trade in imports, for the most part, still centers in the North Atlantic ports and particularly in New York City, through which nearly three fifths of all imports enter the country. The lines north from the Gulf ports, consequently, handle a comparatively small tonnage of imports.

Measured in values of commodities, twenty per cent of our exports pass through the Gulf ports, while about five per cent of the imports enter through those gateways, New Orleans having over seven tenths of the import trade of the Gulf cities. The eastern part of the United States and all the upper Mississippi Valley get their imports via the Atlantic ports; the lower Mississippi Valley and the Southwest obtain their European goods partly from New York direct, partly from New York via St. Louis, and partly via New Orleans and other Gulf ports.

Lower export and import rail rates have to be given

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for traffic handled through the Gulf ports than on the same articles via the Atlantic gateways; because the vessel rates to and from the Gulf are higher and the ocean services less frequent. The railways to the Gulf have a much greater tonnage to the seaboard than toward the interior, and thus have a strong inducement to offer low rates on import traffic if traffic can be secured in that way. From some southern ports this has not been possible. The export and import traffic at Pensacola, for example, was well described a few years ago in a statement made to the Elkins Committee by a vice president of the Louisville & Nashville, the road particularly interested in Pensacola.¹

“ We have been trying to build up particularly the export trade through Pensacola and have been fairly successful. As you can readily understand, though, the total amount of tonnage cleared through that port has been, as compared with the North Atlantic ports, very inconsiderable. The return cargoes, however, of these steamers have been very small; they find better paying tonnage from the Continent and from the United Kingdom to such points as Habana, and it is only the small tonnage destined to this country that they add to fill out. Such tonnage, as a rule, is consigned to inland points in the states of Tennessee, Mississippi, Georgia, and Alabama, particularly the latter, and consists mostly of raw materials which are not produced in this country. On such we are able . . . to secure practically a port proper revenue (domestic rates). Were we to undertake, though, to handle traffic to the Ohio River and beyond, it would require us, to meet competition via the North Atlantic ports, to shrink our revenue from Pen-

¹ Digest of Hearings Before the Committee on Interstate Commerce, p. 612. Senate Doc., 59 Cong., 1 Sess., No. 244.

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asoola to such an extent as to make it unremunerative, particularly so as the steamers require a considerable differential (above the ocean rates to North Atlantic ports) in their ocean charges."

The import and export tariffs now in force via the Gulf ports are more comprehensive than either those applying through Atlantic gateways or those prevailing from and to the Pacific coast. The Gulf tariffs cover a relatively wide range of commodities, and class rates—governed, except when otherwise specified by the Western or Official Classification according to the territory of origin and destination of traffic—and apply upon articles not given commodity tariffs. The difference between the Official Classification and the Southern Classification compels the Gulf lines, in order to meet the competition of the Atlantic roads, to give commodity export and import rates to many articles in the Official Classification. This accounts for the larger number of commodity rates in the Gulf than in the Atlantic export and import rates. The tariffs are for the most part compiled and published by the Gulf Foreign Freight Committee acting as agent for the participating carriers, and these are the tariffs considered in this discussion; but there are also tariffs of minor importance published by individual railways; the Illinois Central Railroad, for instance, has rates applying from shipside, New Orleans, to points south of the Ohio and east of the Mississippi River on certain ores, fertilizers, clay, earthenware, and a few other articles.

The *export* tariffs published through the agency of the Gulf Foreign Freight Committee include, first, rates on classes and specified commodities shipped from Denver and common points, Missouri River cities, St. Paul, Minneapolis, and other points basing on those cities to all foreign conn-

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tries except "Articles for Mexican ports taking through rates via routes over which shipped." In this tariff about one hundred articles are given commodity rates. Packing-house products are not included in this or in other general export tariffs applying through the Gulf exits, because those products have their own special export tariff. Articles other than packing-house products not included in the list of commodities in the tariff applying from Denver, St. Paul, etc., take rates as published by individual carriers, which means that the export class rates of this tariff do not apply upon any article when the carrier has his own commodity rate upon the article in question. The rates apply from and vary with seven groups—the places from which the export rates apply being divided among seven groups, Kansas City being the center or basing point of group one. The Gulf ports to which the rates in this and other Gulf export tariffs apply are Galveston, Port Bolivar, and Texas City, Texas; Algiers, Gretna, New Orleans, Port Chalmette, and Westwego, La.; Gulfport, Miss.; Mobile, Ala.; Knights Key, and Pensacola, Fla.

Two export class and commodity tariffs apply from points in southern Minnesota, Wisconsin and Michigan, and from Ohio, Indiana, Illinois, eastern Iowa, and Missouri, and northern Kentucky—one on traffic via the Gulf ports to Europe, Asia and Africa, and another tariff on traffic from other foreign countries, Mexican ports being excepted in each case as regards articles having through rates. In the tariffs on traffic for export to countries other than Europe, Asia, and Africa, the cities from which the rates—class and commodity—apply are classified in thirteen groups, Chicago being the center of group one, La Crosse, Wis., of group thirteen. The rates vary with these groups. Moreover, the rates to Knights Key, Fla.,

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are higher than to the other ports. The class and commodity tariff covering goods to be exported to Europe, Asia, or Africa, divides the inland shipping points into seventeen groups and omits Knights Key from the list of Gulf ports.¹

In both of the tariffs referred to in the preceding paragraph (No. 1002-A and No. 1004-A, both effective May 1, 1910) articles other than packing-house products not specified take the export class rates given in the tariff. Between fifty and sixty articles are given commodity rates to the Gulf when exported to Europe, Asia, or Africa (Tariff No. 1004-A), but commodities of like character are given the same rate, and thus the number of different rates quoted is much less than the number of individual articles. Moreover, some commodity rates are "general" applying from all of the seventeen "groups" or from such as have the commodities for export, while other commodity rates are "miscellaneous," or limited to shipments from one or more designated cities only. In general, the number of commodity rates on exports to Europe, Asia, or Africa is much less than those on traffic for other foreign parts. There are 125 articles given commodity rates to the foreign countries in the Americas (No. 1002-A), and each individual article usually has its own rate. There are thirteen groups of cities from which rates

¹The rates prevailing at Knights Key are explained as follows by Mr. W. H. Hosmer, chairman of the Gulf Foreign Freight Committee: "Knights Key, at the present time, is exclusively engaged in the handling of Cuban traffic, and the ocean haul being very short, the rates are very much lower from or to that port than from or to New Orleans, Mobile, or Galveston, and the adjustment via that port is intended to equalize or make the same through rate between Havana and the various Groups as can be made on the combination of inland and ocean rates via Mobile, New Orleans, or Galveston."

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are quoted to the Gulf ports with a different and higher rate for Knights Key than for other ports.

As has been stated, packing-house products have a separate tariff applying on exports via the several Gulf ports from all the packing centers, from Cincinnati to Denver inclusive, to all foreign countries, except "on articles for Mexican ports taking joint through rates via routes over which shipped."

Exports from the south and middle West to Mexico are favored by reduced through rates on miscellaneous commodities shipped via the Port Arthur-Mexican Steamship Company running between Port Arthur, Texas, and Frontera, Mexico; and via the Wolvin Line operated between the American ports New Orleans and Texas City, and the Mexican ports Tampico and Vera Cruz.

The Gulf Foreign Freight Committee publishes for its members four *import* tariffs. One of these (No. 1005-A, effective January 10, 1910) names class and commodity rates on imports from Europe, Asia, and Africa to points in the Ohio and Upper Mississippi valleys, the cities and stations of destination being divided into seventeen groups, each group having its rate. A similar tariff (No. 1006-A, effective January 20, 1910) states the import class and commodity rates from these three continents to places in the Mississippi Valley, there being for commodity rates four groups of cities of destination and for class rates six groups; while another tariff (No. 1007-A, effective January 20, 1910) contains class and commodity rates from the same continents to Colorado "points" and Utah "points." A fourth tariff on imports through Gulf ports (No. 1008-A, effective May 15, 1910) names commodity rates from "foreign countries other than Europe, Asia, and Africa" to designated places from Cincinnati on the east to Salt Lake

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City on the west. The principles followed in constructing these Gulf import tariffs are the same as those above explained in describing the Gulf export tariffs, and thus do not require further discussion.

The fact that the Gulf ports have not secured a large import traffic as a result of the special assistance rendered by these favorable import tariffs illustrates how controlling are the forces exercised over traffic routes by ocean shipping facilities and how strong is the tendency of trade, once well developed and organized, to maintain its established location. The Atlantic gateways, furthermore, have the advantage of being the more direct approach to that section of the United States where there has been the greatest development of manufacturing industries. A large share of our imports consists of raw materials in full cargo and steamer lots required by the mills and factories. New York has long held the dominant position in the import trade, and will for a long time to come. New Orleans, although now outranked by Galveston in the volume of exports, still controls the major share of the import traffic of the Gulf ports largely because the importing houses located at New Orleans continue to hold and to expand their trade.

The imports that enter through New Orleans do not compete to any extent with goods originating at New Orleans. As the president of the Illinois Central Railroad stated to the Elkins Committee in 1905, "we have not, on examination of the list of articles imported through New Orleans to interior ports, found that any of the articles are produced or manufactured in New Orleans." This is not true of the important import traffic through New Orleans, and to a less extent through Galveston, to the Pacific coast. In this trade there is competition between imports

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from Europe and domestic goods originating in part at New Orleans, and in part elsewhere in the United States, and shipped to our Pacific coast states through New Orleans or Galveston.

The transcontinental lines leading to California terminals, together with the railroads with which they connect, unite in a " West-Bound Proportional Tariff, naming proportional commodity rates from shipside New Orleans, Galveston, (and) Texas City on traffic originating in foreign countries." This tariff includes a long list of articles. Imported commodities not named on this list pay the domestic transcontinental west-bound rates.

The relation of the rates from the Gulf ports to the West Coast on imports and domestic goods may be indicated by a few comparisons. The import rates on plow beams are \$1.30 per 100 pounds for less than car loads, and 76 cents for car loads (30,000 pounds minimum), the domestic rate being \$1.45 L. C. L., and \$85 C. L. (24,000 lbs.). On cotton blankets the rates are, import \$1.44 and \$.99, domestic \$1.60 and \$1.10, the car load minimum being 30,000 pounds in each case. For earthenware the rates are import \$1.35 and \$.85, and domestic \$1.50 and \$.95, car load minimum 24,000 pounds. Upon hardware (picks, mattocks, adzes, and axes), import \$1.57 and \$1.12, domestic \$1.75 and \$1.25, minimum car loads 30,000 pounds. For other commodities the ratio of import and domestic rates is about the same as for these, the present discrimination in favor of import traffic being less than formerly prevailed.

IMPORT AND EXPORT RATES VIA PACIFIC PORTS

The railways leading east from all Pacific ports, from Vancouver to East San Pedro inclusive, are parties to an " East-Bound Proportional Tariff " covering numerous

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commodities imported from Asia, the Philippine Islands, Australasia, New Zealand, the Fiji Islands, and from "beyond." The articles not specified in this tariff are carried at domestic rates;¹ but the import tariff includes most of the important goods obtained from Oriental countries—bambeoware, China and earthenware, mattings, rugs, skins, silk, tea, gums, fibers, curios, and eastern foods and wares of various kinds. These proportional or import commodity rates, in the case of most articles, are quoted for both less than car load and for car load quantities, the charge per hundred pounds on car loads being from a half to two thirds that on smaller lots. The same rate applies—i. e., the rates are blanketed—over the territory east of the Rocky Mountains to the North Atlantic seaboard. The southeastern section, south of Kentucky and Virginia, excepting a few points in Tennessee and Alabama not being included in the rate "groups," do not enjoy these reduced import rates on goods from trans-Pacific countries. The tariff applies to a limited number of places in eastern Canada, but not "to points in Canada in connection with the Canadian Pacific Railway."

For the most part, the goods imported from the Orient and Australasia are different from those produced in the western United States, and thus it is scarcely possible to compare domestic and import rates. Most comparisons must be between the rates on goods shipped east from our west coast some time after having been imported, and the rates on the same goods when shipped on through bills of lading directly from the Orient or Australasia to the cen-

¹ Except that the northern lines—those running east from Vancouver, Seattle, Tacoma, and Portland—have special import rates for classes 1, 2, 3, and 4 on goods destined to Groups B, C, D, and E. The rate is the same to all four groups.

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tral or eastern part of the United States. For example, earthenware when imported from China or Japan to San Francisco, and later sold from there to a buyer east of the mountains, is charged a rate of \$2.00 a hundred pounds, whereas the proportionals of the through import rates are \$1.30 for less than car loads, and ninety-five cents for car load quantities. The domestic rates less than car load on sheep and goat skins are \$2.50 to \$2.65 a hundred pounds, while the proportion of the through import rate is \$1.50.

As regards *traffic exported* from the Pacific coast, there are two "Joint Proportional Tariffs," each containing both class and commodity rates; but they apply to exports via Vancouver over the Canadian Pacific Railway, and the Minneapolis, St. Paul & Sault Ste. Marie Railway, and the American carriers reaching those roads from points in Illinois, Wisconsin, Iowa, Missouri, East Chicago, Gary, and Hammond, Ind.; Armourdale, Atchison, Kansas City, and Leavenworth, Kan.; eleven places in northern Michigan; St. Paul, Minneapolis, Duluth, and twelve other points in Minnesota; and from Omaha, Neb. The carriers participating in these export rates via Vancouver do not include any of the transcontinental lines within the United States, and for reasons that will be stated presently.

One of these two proportional tariffs in force through Vancouver, via the Canadian Pacific Railway, applies to traffic from the section of the United States just described to Australasia; the other tariff applies to Japan, China, and Manila, and also contains through rates to Australasia via the Orient. These tariffs contain a relatively long list of commodities, and they state, for car loads and less than car loads, both the proportional rate from the inland point of origin in the United States to Vancouver, and also the through rate from the interior of the United States to the

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foreign point of destination. Moreover, on shipments for which no commodity rate is named there are proportional and through export class rates, governed by the western classification. In other words, the Canadian Pacific has a complete schedule of export rates to Vancouver for traffic destined to trans-Pacific countries, different from the tariffs on domestic traffic.

Prior to November 1, 1908, the railway lines to the Pacific ports of the United States had proportional and through rates on export traffic to trans-Pacific countries similar to the tariffs now prevailing over the Canadian Pacific Railway via Vancouver. The proportional tariffs were withdrawn because the Hepburn Act of 1906, as interpreted by the Interstate Commerce Commission, required the railways to publish and file with the commission *all* their rates. Before 1908 it was the practice of the trans-continental railways, some of which have their own trans-Pacific steamship lines, to quote such through rates from the eastern or central part of the United States to the Orient and Australasia as might be required to meet the competition of "carriers serving Atlantic ports and transporting Asiatic traffic via the Suez Canal route." The through rates thus might change frequently, and the railway took its share of the variable charge. To publish and file the rates would prevent this. Ordinarily, rates can legally be raised only upon thirty days' notice and lowered upon ten days' notice of change; and although the Interstate Commerce Commission ruled that the American railways to the Pacific might raise their rates upon ten days' notice and reduce them upon three days' announcement, the companies decided not to attempt to compete for the export traffic even under those conditions. Thus, for the present at least, "shipments destined to and consigned through to

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points in Asia, Philippine Islands, Australasia, New Zealand, Fiji Islands, or beyond," are charged the regular domestic rail rates to San Francisco by the southern lines and those to Seattle by the northern lines, and, of course, the current ocean rates across the Pacific. There is, however, one important exception to this general rule in the case of cotton and cotton linters, which have a proportional commodity rate of ninety-five cents from Montgomery and Selma, Ala., to San Francisco, and from Montgomery, Selma, Northport, and Tuscaloosa, Ala., to Tacoma and Seattle on shipments to Asiatic ports, the Philippines, and Australasia.

On traffic consigned through "to Alaska and points on or tributary to the Yukon River" the domestic rates to Seattle, the chief center of our trade with Alaska, also apply to Vancouver and to New Westminster, B. C.; likewise, the rates to San Francisco are the same as those to Seattle. Similarly, "on traffic destined to and consigned through to the Hawaiian Islands" the rates thereon to East San Pedro, Cal., are those—the domestic rates—applying to Seattle; while on shipments through East San Pedro to Mexico, Central America, and South America the rates to East San Pedro are the same as those to San Francisco. In this wise are the rates standardized by competing routes to Alaska, to the Hawaiian Islands, and to the west coast of Mexico and Central and South America.

CONCLUSION

The foregoing chapters on rate making and rate systems, though containing much detail, present only the main features of the leading rate structures in the United States. The thousand and more operating railway companies in our country have no less than 250,000 published tariffs in force, and these are frequently amended and enlarged as business

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conditions require; but in making and changing these tariffs, policies and principles are followed that give increasing system to rate making. Year by year railway tariffs follow more clearly definable principles; they represent more definite policies of rate making on the part of railway companies and of rate regulation on the part of the government. The personal whims of traffic or executive officer play but a very minor rôle in tariff construction; economic forces and the public standards as to what is equitable mainly determine tariff systems and control rate sheets.

REFERENCES

1. The "Tariffs" consulted in writing this chapter were:

(1) G. O. I. C. C. No. 1927. Pennsylvania Railroad Company, Import Proportional Commodity Rates, etc. Effective May 10, 1910.

(2) I. C. C., F. 228. Pennsylvania Company, Joint and Proportional Freight Tariff on Classes and Commodities, etc. Effective March 15, 1910.

(3) G. O. I. C. C. No. 1400. Pennsylvania Railroad Company, Class Rates and Bases for Rates to Western Points, etc. Effective December 15, 1909.

(4) G. O. I. C. C. No. 1401. Pennsylvania Railroad Company, Commodity Rates to Western Points, etc. Effective December 15, 1909.

(5) I. C. C. No. B-11144. New York Central and Hudson River Railroad Company, Import Commodity Rates, etc. Effective January 1, 1910.

(6) I. C. C. No. 3648. Michigan Central Railroad Company, Local and Joint East-bound Class and Commodity Tariff. Effective May 31, 1909.

(7) I. C. C. No. J-5172. Foreign 180-H. Illinois Central Railroad Co. Local and Joint Proportional Rates from New Orleans to points in Mississippi, Alabama, Georgia, North Carolina, and Tennessee. Effective September 10, 1909. Supplement No. 11, May 21, 1910.

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(8) The tariffs issued by the Gulf Foreign Freight Committee as follows:

No. 1000-A—February 16, 1909, on classes and commodities from Cuba to Mobile, New Orleans, and Galveston.

No. 1001-A—May 1, 1910, on classes and commodities from Atchison, etc., to Gulf ports for export to all foreign countries.

No. 1002-A—May 1, 1910, on classes and commodities from Chicago, etc., to Gulf ports for export to foreign countries other than Europe, Asia, and Africa.

No. 1003-A—February 15, 1910, on packing-house products to Gulf ports for export to all foreign countries.

No. 1004-A—May 1, 1910, on classes and commodities from Chicago, etc., to Gulf ports for export to Europe, Asia, and Africa.

No. 1005-A—January 10, 1910, on classes and commodities imported via Gulf ports from Europe, Asia, and Africa, to Chicago, etc.

No. 1006-A—January 20, 1910, on classes and commodities imported via Gulf ports from Europe, Asia, and Africa, to Omaha, etc.

No. 1007-A—January 20, 1910, on classes and commodities imported via Gulf ports from Europe, Asia, and Africa, to Denver and Utah common points.

No. 1008-A—May 15, 1910, on commodities imported via Gulf ports from foreign countries other than Europe, Asia, and Africa, to Cincinnati, Salt Lake City, and designated cities in intermediate territory.

No. 1009 —November 1, 1909, on classes and commodities from Knights Key, Mobile, New Orleans, and Galveston, to Cuba.

Joint Through Freight Tariff No. 1 on miscellaneous commodities to Vera Cruz, Frontera, and Tampico, Mexico.

Ref. 1-2

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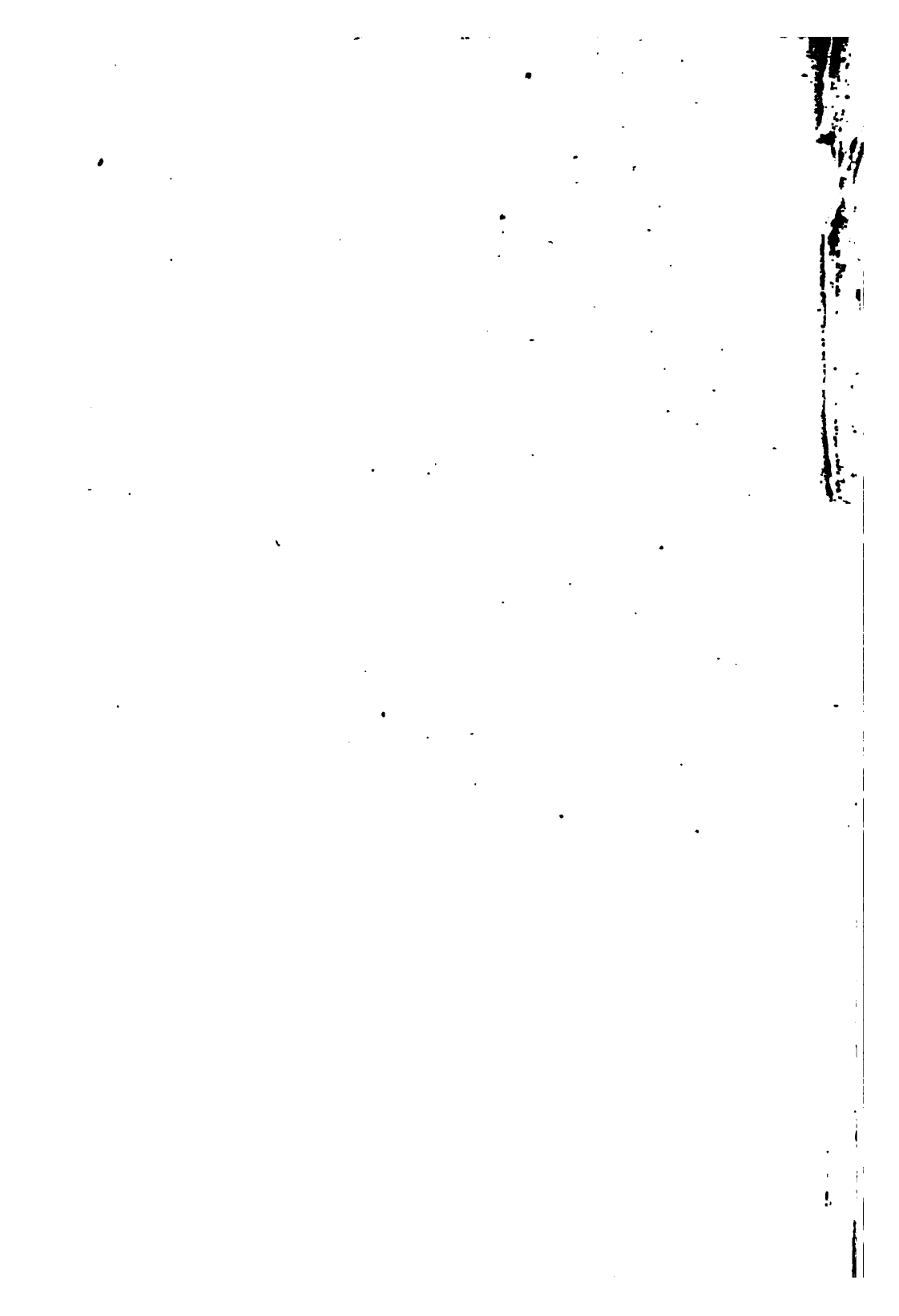


Fig. 1-2

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